

No. 2996

IN THE

# United States Circuit Court of Appeals

For the Ninth Circuit

2

WILSON & WILLARD MANUFACTURING COMPANY,	<i>Appellant,</i>
VS.	
UNION TOOL COMPANY, et al.,	<i>Appellees.</i>

## APPELLANT'S OPENING BRIEF

RAYMOND IVES BLAKESLEE,  
*Solicitor and Counsel for Defendant-  
Appellant.*

**Filed**

MAY 12 1917

Filed this.....day of May, 1917. **F. D. Monckton,**  
Clerk.

FRANK D. MONCKTON, Clerk.

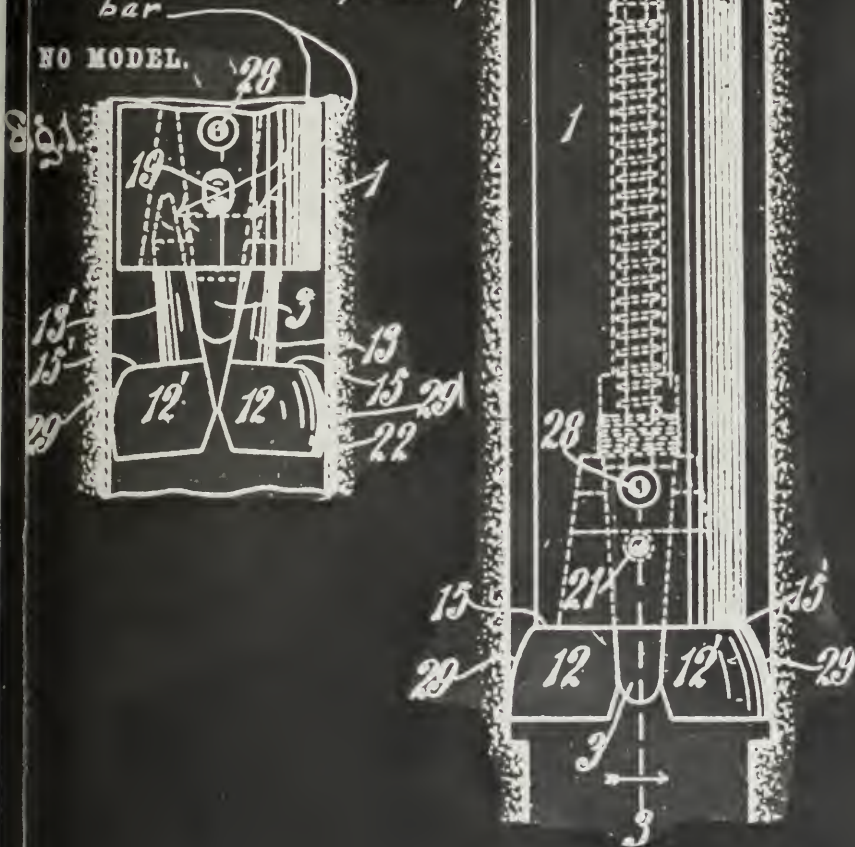
By..... Deputy Clerk.



# O'Donnell and Willard

Cutters Shown tilting  
from central spreading  
bar

NO MODEL.





Middle Joint

Swan Underreamer

Shee contact point high

openCutter  
way

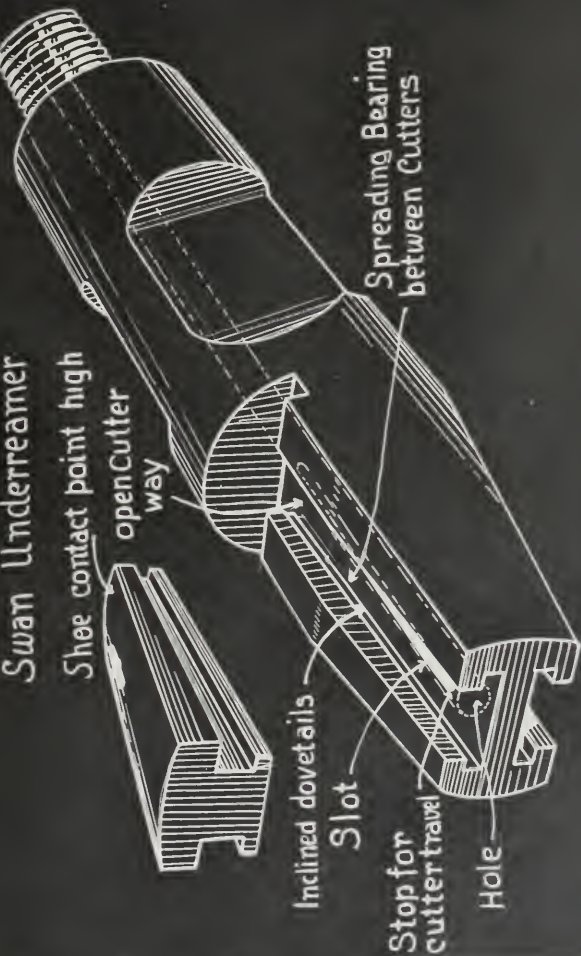
Spreading Bearing  
between Cutters

Inclined dovetails

Slot

Stop for  
cutter travel

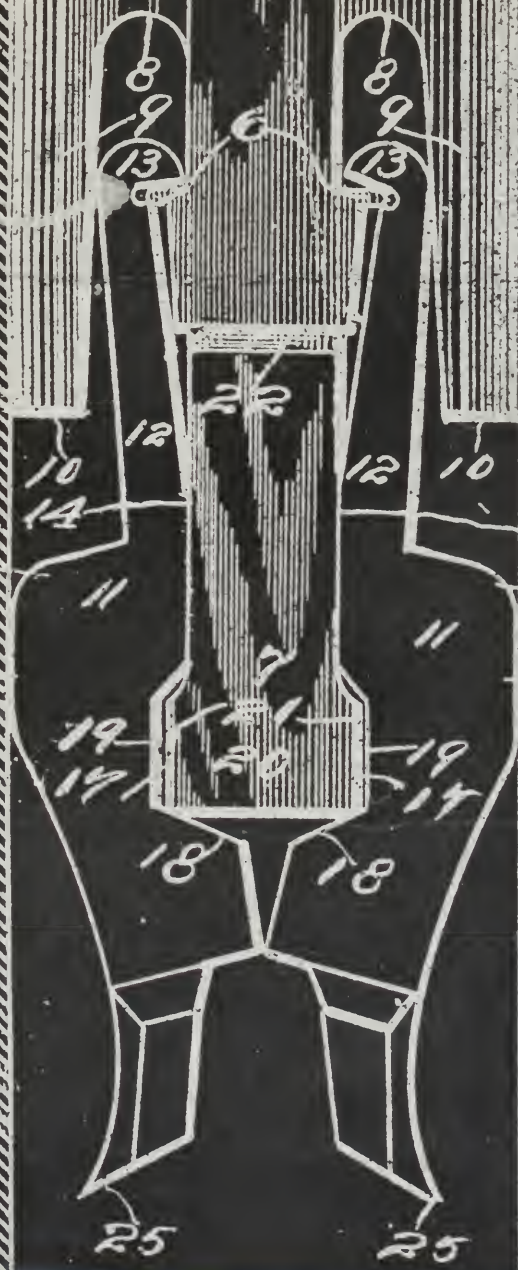
Hole







Brown Garner showing cutters interlocked to the  
projections 6 - preventing cutters travel independent  
of tee bar.

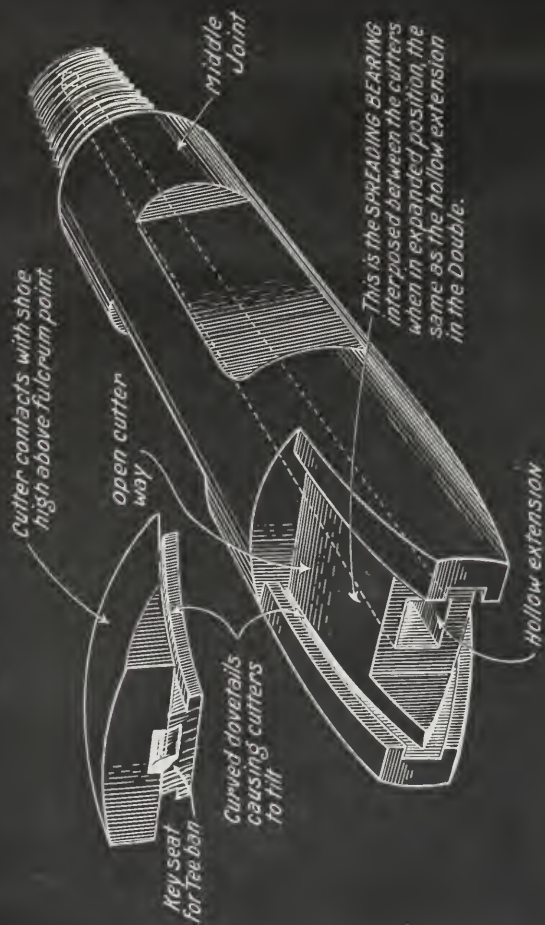


14  
15  
16





# JONES ROUND NOSE





# *Jones Round Nose Reamer.*



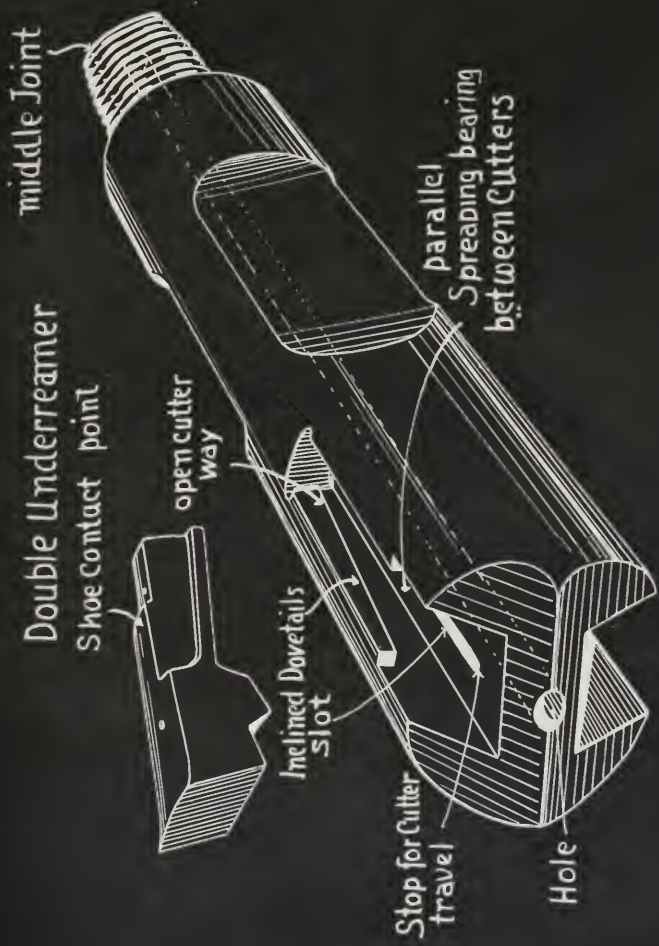
Shoe contact point

Curved dovetails

Extreme lower end  
of hollow extension  
interposed between  
cutters -

Cutters collapsed showing that  
all during collapsion the cutter  
is tilting over the lower end of  
the hollow extension partaking  
of the same tilting action as  
the Double -







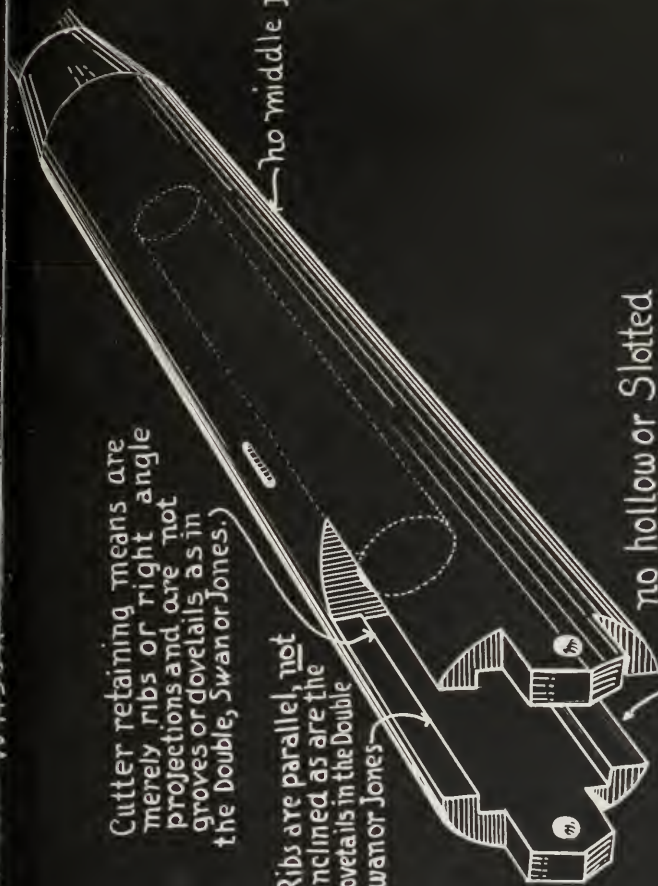


Cutter retaining means are merely ribs or right angle projections and are not grooves or dovetails as in the Double, Swan or Jones.

Ribs are parallel, not inclined as are the dovetails in the Double Swan or Jones.

no middle joint.

no hollow or Slotted extension  
no bearing or part of the body between Shanks of cutters





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## APPELLANT'S OPENING BRIEF

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This case comes before your Honors on an appeal taken by the defendant Wilson & Willard Manufacturing Company from an interlocutory decree entered in the lower court in favor of complainants and finding the Double patent No. 734,833, valid and infringed as to claims 1, 2, 6, 7 and 8, the charge of infringement of claims 3, 4 and 5 having been withdrawn by the complainants upon the trial and argument.

The interlocutory decree provided for the usual injunction against the defendant-appellant, and for an accounting of profits and damages in favor of appellees-complainants, and awarded costs to complainants.

The appellee corporation and the appellant are, and at all times mentioned in the pleadings and proofs have been, engaged in the manufacture of reamers for the enlarging of oil-well holes, and between them have practically monopolized this business in the United States and particularly the important California fields, and the appellant has likewise largely monopolized the underreamer business in foreign oil fields.

### **SPECIFICATION OF ERRORS**

First. The Wilson, or appellant's underreamer, is an entirely new form of an underreamer embodying features new and not disclosed in any other types preceding it. Its mode of operation is different. Its construction is such that entirely different and better results in the co-action of its parts are produced, and the underreamer operation accordingly facilitated thereby. Its principal and new features were entirely new and are covered by basic claims—broad claims—the nature of which is not to be found in appellees' patent.

The Wilson underreamer does not include the fundamental elements of the Double underreamer, namely, the "hollow slotted extension" of any design, much less "hollow slotted extension" with opposite parallel bearing faces with upwardly and inwardly inclined dove-tailed ways, the very elements upon which the Double underreamer patent is based, as the Court will observe.

The cutters of the Wilson underreamer have no "inward projections," the means employed by the Double underreamers for expanding its cutters. On the contrary, the Wilson cutters are provided with entirely different means, namely, laterally extended shoulders on the body of the cutters to co-act with downwardly projecting lugs, at the extreme lower end of the Wilson reamer body, both of which elements are entirely absent in the Double patent underreamer. Numerous other features of construction found in the Wilson underreamer, differing radically from those disclosed by the underreamer of appellee's patent, will be found.

Second. That the Double underreamer was merely a transitory step in the art. Less than six per cent. of the underreamers appellee has manufactured and sold, as shown on the accounting in this case, conform to the specifications and drawings, and limited step in the art, reflected by the specific claims of the Double patent;

That said Double underreamer was, in effect, abandoned by the appellee corporation's predecessor long before the said corporation came into existence; and the appellee corporation, as shown on the accounting, used such patented Double reamer in less than six per cent. of its reamer business as stated; that such abandonment was occasioned by the unprecedented success of the Wilson underreamer, which underreamer promptly superseded the Double underreamer, making it necessary for the prede-

cessor of the appellee corporation to appropriate important features of the Wilson underreamer, in order that they might more successfully attempt to compete with the Wilson underreamer;

That such new form of alleged Double underreamer, namely, the new combination Double-Wilson underreamer which it has been producing, although a great improvement over appellee's original type being still unsatisfactory, it was found necessary to appropriate still more of the Wilson elements and to more closely imitate the form, construction and appearances of the Wilson underreamer, which appellee did as will appear in case 2918. The appellee's action in so doing, we regard as conclusive proof that the Wilson underreamer contained new and novel elements and combinations not disclosed in the Double reamer, nor contemplated by the patentee, and which entirely differentiate it from the Double underreamer invention and place it completely beyond the scope of the limited combination claims of the Double patent;

That, therefore, the Double invention did not take the last important step in, nor did it standardize, the underreamer art, and that, therefore, the lower court erred in even implying that the Double patent was in any sense basic, pioneer or comprehensive in its position in the art or in its scope; and in allowing the trivial transitory Double invention such an unprecedented extension of the application of the doctrine of equivalents in determining the effect of its claims.



Three. That the decision of the lower court was based upon erroneous conclusions—erroneous because of a complete failure on its part to comprehend, much less understand, the construction, interrelation of parts, and mode of operation of underreamers ante-dating the Double underreamer, and many important ones of which were known by Double, such as, the O'Donnell and Willard reamer, with its tilting cutters and “hollow slotted extension”;

Or the Jones round nose underreamer, with its “open dove-tailed slip-ways and with its dove-tailed cutters co-acting therewith, its hollow spreading extension interposed between the cutter, its shouldered cutters projecting through the dove-tailed slip-ways and having shoulders to co-act with the casing shoe high above their fulcrum point, such cutters tilting over its interposed spreading bearing or hollow extension, and which tilt is permitted by the curvature at the back of the cutters identically as the tilting of the Double cutter is permitted by the “V”-shaped curve at the back of its cutter, and further by its upwardly and finally inwardly inclined dove-tails of the slip-ways;

Or such as the Brown underreamer, whose tilting cutters were fixedly attached to their suspension means, thus directing each cutter either upwardly or downwardly with the travel of its means. The Court did not understand that action, and explained that because it did not have such connection, it differed from the Double underreamer in this tilting action;

however, he admitted that in all other respects the Brown invention was an anticipation of the Double invention in regard to the tilting action of the cutters;

And such as the Canadian underreamer with its swinging cutters collapsing by means of its "V"-shaped groove at the back of its cutters, swinging over the lower end of the "hollow slotted extension"; or such as the Swan invention with its dove-tailed open slip-ways, with dove-tailed cutters co-acting therewith, and with shoulders projecting through such open dove-tailed slip-ways to contact with the casing shoe to produce collapsion;

Or, such as the Day patent reamer, with its spring-actuated cutters swinging and collapsing over the interposed spreading bearings;

Or, such as the Edward North reamer covered by patent No. 674,793, with its cutters suspended on a spring-actuated rod, said cutters having "enlarged key-seats" for the reception of the rod head or suspension means, and by which "enlarged key-seats" the cutters are permitted to "tilt" just as do the cutters of the Double;

Or, such as the Kellerman covered by patent No. 679,384, whose cutters have "enlarged key-seats" permitting them to tilt when collapsing or expanding, just as do the cutters of the Double;

Or, of numerous other reamers disclosing one or more of the elements claimed by appellees as producing a construction original with Double.

Fourth. That Double, the patentee of the patent in suit, was not the original and independent inventor of any material or substantial part of the combinations claimed in the patent in suit, or of any of such combinations themselves, as covered by the claims found infringed; but that, on the contrary, either one Frederick W. Jones was the original inventor thereof, or that Double and Jones were the joint inventors thereof, and that Double surreptitiously and unjustly obtained the patent in suit, having appropriated such sole or joint inventions of Jones, under the pleadings of this case pursuant to U. S. R. S. 4920.

Five. That the Court has found that the heart of the Double invention was the "open dove-tailed slip-ways" with "dove-tailed cutters" co-acting therewith and means for expanding the cutters and to cause them to tilt on the suspension means; that in view of anticipatory matter previously mentioned such finding was an error; that such combinations were old in the art. However, had such combinations been new and novel with Double, the Court erred in finding such combinations covered by any claim or claims of his patent for the reason that claims 2, 6, 7 and 8 make no mention whatever of dove-tails, and claim 1 (claims 3, 4 and 5 being voluntarily abandoned by appellees), claims dove-tails of only a certain form, namely, "upwardly and inwardly inclined" and even that form limited to a combination with the underreamer having a downward extension with opposite parallel bearing faces, having a key

way therein, as well as other limitations, such as the shoulder in the hollow mandrel and a key mounted in a rod and in combinations with slips (or cutters) being furnished with inward projections to slide upon the downward extension of the mandrel to spread apart the cutting edges of the slips when the slips are drawn up; *every one of which limitations is entirely absent in the Wilson underreamer construction.*

That the said Double patent claims are so limited in scope by language so clear and so unequivocal that their meaning obviously indicates that the patentee intended to cover nothing other than the particular form and co-relation of elements specifically mentioned and set forth therein; and as still further proof of intentional restrictions and limitation of his patent, the file wrapper and contents afford ample proof, as for instance in the substitution of narrower claim 7 for the only relatively broad claim ever presented in the case, and after the citation of prior patents by the patent office. Still further proof of the extremely narrow margin of invention, if any, made by Double, is made clear by appellee's abandonment of claims 3, 4 and 5, which claims are no narrower in scope than the claims relied upon. If the Wilson invention does not infringe claims 3, 4 and 5, as they admit, there can be nothing remaining in claims 1, 2, 6, 7 and 8, to be infringed. It must be then that the appellant's underreamer is to be measured in infringement by the difference between claims 1, 2, 6, 7 and 8, on the one hand, and

claims 3, 4 and 5 on the other hand. If the Double patent, therefore, is to be so construed, the Wilson reamer cannot infringe because it does not contain such narrow structural difference.

We assert that by the residue or remainder of matter of claims 1, 2, 6, 7 and 8, after deducting the matter contained in claims 3, 4 and 5, appellees utterly fail to cover the matter found by the lower court to have been invented by Double. Furthermore, such residue of matter cannot possibly be infringed by the Wilson reamer. Proceeding further within the same logic, what reason is there to find infringement as to claim 1, limited to inwardly and upwardly inclined slip-ways which appellant does not use, any more than to find infringement of claim 3 limited to a notched key which appellant does not use. Certainly the doctrine of equivalents cannot be so distorted and made so abnormally flexible as to bring the Wilson pronged type of under-reamer with its radically different forms and relation of parts within the scope of the claims of the Double patent.

Sixth. That in the event it were proper to concede to the Double patent any material scope, Double was not the true and first inventor of such matter, inasmuch as certain of the Double patent claims, if construed in any but the most narrow and specific manner, clearly interfere with certain of the claims of the O'Donnell and Willard patent, application for which was co-pending with application for the



Double patent and was filed prior to the application of the Double patent; so that O'Donnell and Willard must be found the true and first inventors of any such common subject matter. This contention likewise applies to the Brown patent, the application for which was co-pending likewise with the O'Donnell and Willard and Double applications and filed before the Double patent application; and the fact that the patent office did not declare any interference between the Double and the Brown and O'Donnell and Willard applications raises the presumption under the law that the Double invention consisted only in the minute differences between its specific self and the specific subjects of said other patents, and that its claims must be correspondingly most narrowly construed to the exact construction and inter-relation of parts disclosed in its specifications and drawings.

Seventh. That the present suit, originally brought in 1908, dismissed for want of prosecution in 1910, and allowed to lie without prosecution, after refiling, until 1912, is merely a proceeding to harass the defendant, of a like kind with that suit finally disposed of by your Honors 227 F. R. 607, entitled "*Wilson and Willard Manufacturing Company, et al. vs. Double and Bole.*"



## BRIEF OF ARGUMENT

Much time has been consumed in the taking of testimony in this case in showing that each part of the Double underreamer, covered by Patent No. 734,833 and which is the subject of this suit, was old in the art and, therefore, could not be claimed as an invention by Double or his collaborators. The evidence brought out by the appellant to show that all of the elements of the Double combination patent were old in the art became so convincing that eventually the appellee on the argument abandoned his contention that he was the inventor of these elements and admitted that his patent claims covered combinations only, each of which was made up of elements previously known in the art of oil well underreaming. Obviously, therefore, the point for this Court to decide is *whether or not* the *appellees* have proven beyond a doubt that the Wilson underreamer, Patent No. 827,595, *infringes these claims for combinations* of elements.

In the consideration of this question we rely upon those doctrines which have been well established in patent law and which will be set forth herein.

The claims of invention, if any, in the Double patent must be limited to the specific combinations of elements as covered in the claims of said patent and these claims are all combination claims. The law presumes that all the elements of a combination claim are old and that the invention covered by such

claims resides in the whole combination considered as an entirety or as a unitary structure.

“A claim for a combination carries with it an implication that the separate elements are old.” *Westinghouse vs. Edison Electric Light Company*, 63 Fed. 592.

“A combination is always an entirety.” *Schumacher vs. Cornell*, 96 U. S. 554.

“The point to be emphasized is that the law looks not at the elements or factors of an invented combination as a subject for a patent but only to the combination itself as a unit distinct from its part. \* \* \*” *Yesbera vs. Hardesty Mfg. Co.*, 166 Fed. 125.

These points are admitted in the appellee's brief before the lower court in the following words:

“Defendant's attempt to harp upon the fact that complainants concede that each element (of the Double combination patent) was old. The fact that the claims are for a combination expressly admits this in law.”

He then cites, *Hopkins on Patents*, Sec. 137, p. 214:

“Rule XXXVII. In a combination claim each element is conclusively presumed as a matter of law to be old, whether old in fact or not. The foundation of this rule is, that if, among the elements, there is one which is itself patentably new, it must be separately claimed, or it is dedicated to the public by its inventor's failure to claim it. Thus Judge Baker has said: ‘The failure to claim either one of the elements separately raises the presumption that no one of them is novel.’ *Campbell vs. Conde Implement*

*Co.*, 74 Fed. Rep. 745. And Judge Woods has said: 'When a combination is claimed there arises an implied concession that the elements are old, and not separately patentable.' *Hay vs. Heath Cycle Co.*, 71 Fed. Rep. 411-413."

Appellee further states in his brief before the lower Court:

"A combination claim is an entity; each element is merely an integer."

He then quotes:

"A combination is a composition of elements, some of which may be old and others new, or all old or all new. It is, however, the combination that is the invention, and is as much a unit in contemplation of law as a single or non-composite instrument. \* \* \*" *Leeds & Catlin Co., vs. Victor Talking Machine Co.*, 213 U. S. 301, 318.

In view of the above citations and the quotations from the appellee's brief before the lower Court there can be no doubt that the appellee understands and admits these fundamental principles of Patent Law, viz.: That the only claim to invention in the Double patent resides in the combination of elements, old in the art, and which combination is described and limited by the claims in said patent, and that this combination must be considered as an entirety or unitary structure.

It follows as a corollary of the above doctrines that, in order to prove infringement of a combination claim, it must be shown beyond a reasonable doubt that *the entire combination*, as a unitary structure,

having substantially the same mode of operation, must be present in the alleged infringing device. Both must contain the same elements and have substantially the same mode of operation. If the elements are the same in both combinations and the respective modes of operation of the two combinations are different, then there is no identity between the combinations; if the mode of operation is identical but obtained by a different combination of elements, here also infringement is negatived. These are also fundamental principles of Patent Law in substantiation of which numerous authorities could be cited.

“We know of no authority where a defendant has been held as an infringer of a combination claim where he omits three of the elements of the combination. If the defendant omits one or more of the elements which make up the combination he no longer uses the combination. It is no answer to assert that the omitted elements are not essential and that the combination operates as well without as with them.” *Evans et al. vs. Hall Printing Press Co.*, 223 Fed. 539.

“An infringement involves substantial identity, whether that identity be described by the terms ‘same principle,’ same ‘*modus operandi*,’ or any other. \* \* \* *The argument used to show infringement assumes that every combination of devices in a machine which is used to produce the same effect, is necessarily an equivalent for any other combination used for the same purpose.* \* \* \* *This is a flagrant abuse of the term ‘equivalent’.*” *Burr vs. Duryee*, 1 Wall. 531, 572. (Cited in *Westinghouse vs. Boyden Power Brake Co.*, 170 U. S. 568.)



“To make one mechanical device the equivalent of another it must appear not only that it produced the same effect, but that such effect is produced by substantially the same mode of operation.” 5 Bann. & A., 4. See Walker on Patents, Sec. 353, and cases there cited.

We will next attempt to arrive at a definite understanding of the combination of elements covered by the Double patent together with their mode of operation. It is essential that the elements making up the Double combination should be kept in mind and their mode of operation should be clearly understood. *The lower Court failed to grasp the distinction between the elements comprising the Double combination and the mode of operation of the combined elements.* The consequence is that the lower Court in describing the Double invention as the “*tilting of the cutters,*” which is a mode of operation, combined with the “*interrelated dovetails,*” which is an element of the combination, shows plainly that it failed to understand either the Double combination or its mode of operation. Unless this distinction is kept clearly in mind, no intelligent comparison can be made between the Double patent and any other underreaming device and the logic of this statement will be obvious when it is remembered that, in order to establish infringement of the Double patent by the Wilson device, *the appellee must show that they are combinations made up of the same elements and that their mode of operation is substantially identical.* The above citation (*Evans et al. vs. Hall Printing Press Co.,*

223 Fed. 539) reiterates the legal principle that, regardless of the similarity of the modes of operation of two combinations, if one of them omits one or more elements of the other combination, infringement is negatived. On the other hand it was held by this Court in *Western Engineering & Construction Co., vs. Ridsen Iron & Locomotive Works*, 174 Fed. 224, that notwithstanding the defendant's gold dredger contained all the elements of the claim charged to be infringed, *there was no infringement because defendant had, in its dredger, changed the co-operative inter-relation of such elements, thus changing the mode of operation of the device.* There being no identity between the respective modes of operation, there was, of course, no identity between the two devices and, therefore, no infringement, and this Court, speaking through your Honor Judge Gilbert, so held.

In its decision the lower Court explains its views of the features which make up the Double combination in the following language:

“A hollow mandrel with inner shoulder; a downward extension with a shoulder at the side of the extension; a spring on the shoulder in the hollow mandrel; a rod playing in the mandrel supported by the spring, and a key at the lower end of the rod to carry the cutters were, in such combinations, all old in the art. *The chief novel feature of the Double invention was the tilting means adopted for the collapse and expansion of the cutters—in combining that means with inter-related dovetails on the cutters and ways of the body extension.*”



Also the lower Court states in its decision:

“None of the underreamers of the prior art combine cutters tilting over the lower end of the reamer body with shanks having dovetails so inter-related with dovetail ways upon the body of the reamer as to afford inner, outer and lateral bearings when in the reaming position.”

At this juncture, and before proceeding further, we deem it highly important to direct the attention of this Honorable Court to the very significant finding of the lower Court, just quoted above, and which we here again quote for the purpose of fully considering its true import.

“The chief novel feature of the Double invention was the *tilting* means adopted for the collapse and expansion of the cutters—in combining that means with inter-related dovetails on the cutters and ways of the body extension.”

“None of the underreamers of the prior art combine cutters tilting over the lower end of the reamer body with shanks having dovetails so inter-related with dovetail ways upon the body of the reamer as to afford inner, outer and lateral bearings when in the reaming position.”

We here have the very heart of the findings upon which Judge Cushman of the lower Court relied when determining that the Wilson reamer infringed appellee's patent.

We submit, your Honors, that it can be readily determined that, in view of this finding the lower Court grievously erred in his opinion.

The feature of the “*tilting* means adopted for the collapse and expansion” of the Double cutters, was, as will be pointed out, old and not the invention of Double, and what is of much greater importance at this time is that the Wilson reamer *does not employ any such tilting means.*

Again, the lower Court finds that “none of the underreamers of the prior art combine cutters tilting over the lower end of the reamer body with shanks having dovetails so inter-related with dovetail ways upon the body of the reamer as to afford *inner, outer and lateral bearings* when in reaming position.”

Now, please observe that the shouldered cutter ways on the body of the Wilson reamer (not dovetails) cannot under any circumstances be so inter-related with the shoulders on the shank of the cutters as to afford *inner bearings* when in reaming position, nor when collapsed or when in any position whatsoever, *for the simple reason that there is no metal in the Wilson reamer* where there would have to be for that purpose—simply open space.

Even a casual examination of the form of the cutter ways of the Wilson reamer will readily reveal the striking fact that there is nothing on the body interposed back of the cutter retaining shoulders, viz.: between them.

In fact such an inter-relation of dovetails as is disclosed by the Double reamer would require a very

extensive reorganization of the Wilson parts and omissions as well as additions thereto, otherwise the cutters would be incapable of collapsing or expanding.

It is clear that the lower Court simply did not understand the construction of the Wilson reamer. The only intrust bearings between the shanks of the Wilson cutters are the detachable block (7) of Wilson No. 1, or on the T-head of the Wilson No. 2.

Here we find differences in construction, and inter-relation of parts and in modes of operation and of function of elements so pronounced as to completely negative any possible charge of infringement of the combination stated by the lower Court to be the "chief novel feature of the Double invention." In short, we find absolute absence in the Wilson reamer, of the "tilting means" of the Double reamer, and of the "inter-related dovetails" of the Double reamer for any purpose whatsoever, much less to form "inner bearings when in reaming position."

Later in this brief we will show that this hypothetical combination *is not covered by any of the claims in the patent in suit and, therefore, cannot possibly be regarded* as the combination that the patentee, his collaborator Jones, and his attorney, who is the opposing counsel in this action, had in mind when they drew up these claims. First, however, we will direct the attention of the Court to the

feature of the "tilting means adopted" (by the designer of the Double underreamer) "for the collapse and expansion of the cutters." Strangely enough the lower Court concludes that Double invented this "means." This is so conclusively disproven by the evidence and exhibits in this case that this astounding conclusion can be explained only on the ground that the lower Court failed signally to understand the technique of the several exhibits revealing this feature. It would probably be unnecessary to enlarge upon this matter if it were not that the lower Court virtually decided the case upon this point.

Even a casual examination of the exhibits will show that several of them, notably the Brown patent, the Jones round nose reamer and the O'Donnell & Willard patent, each contained this feature of the *tilting cutters* and that this action in the Brown patent, No. 687,296, which antedated the Double patent, is identical in every detail with the *tilting action* of the *Double combination*. The following statement from the decision of the lower Court will show that the Court failed altogether to understand the action of this Brown underreamer:

"In the Brown patent, upon which the claim was first rejected, the means for holding the cutters in expanded position, over which they were allowed to collapse, appear the equivalents of the Double invention; but the means by which the cutters were carried on the rod were essentially different.

"It is necessary that they be so freely sus-

pended on this rod as to permit them to tilt forward and back; over and upon the lower end of the extension. In the Brown device, this was accomplished by an inwardly projecting shoulder upon the upper extremity of the cutter, fitted or hanging on a shelf or shoulder extending from the spring-actuated box into the cavity provided for the accommodation of the cutter shank.

“In the Double device, the key carried by the rod loosely fits in the hole in the upper part of the inner face of the cutter shank. In operation, as the rod carries the cutters up into the reaming position, the cutters will travel together, for the rod, with the aid of the key inserted in each shank, would control each cutter. But, as the box, upon which the cutters hang in the Brown device, travel downward, the cutters do not, necessarily, travel with it, save by their own weight. The expansion on the end of the rod would keep them from falling out, but it would not bring them down with it, together.

“The foot of the casing, which forces the cutters down in collapsed position, might become jammed out of shape, so as not to be uniform on both sides, or rocks or other substances might get between the foot of the casing and the outer shoulder of the cutter, resulting in one cutter being carried down ahead of the other, if anything interfered with the descent of the other.

“This shows such a difference in the method of operation as to prevent anticipation of the Double invention by Brown. It is, therefore, obvious that, as Brown invented one ‘means’ and Double another ‘for tilting the slips’; the Commissioner of Patents rightfully rejected Double’s broad claim for all means ‘for tilting the slips,’ which would have included the means invented by Brown.”



Now the drawings accompanying the Brown patent (and which will be found among the exhibits in this case), are perfectly clear and they prove positively that the whole of the above statement is based upon an entirely erroneous conception of the Brown patent. In the Brown device the means by which the cutters were carried on the rod was *not* in the action accomplished by an inwardly projecting shoulder on the upper extremity of the cutter, fitted or hanging upon a shelf or shoulder extending from the spring-actuated box into the cavity provided for the accommodation of the cutter shank. On the contrary the drawings plainly show that this shoulder or lug on the spring-actuated box fitted *loosely* into a pocket, slot or keyway in the cutter shank, and both cutters or slips *do*, necessarily, travel downward as well as upward in conformity with the same movement of the spring-actuated box. Also, as these cutters are positively controlled by the movements of the spring-actuated box, it would be impossible for one cutter to be "carried down ahead of the other." Also the keyway or pocket is made larger than the lug, pivot key, or shoulder in order "to permit the slips or cutters to partake of a tilting action" which is plainly illustrated in the patent drawings.

On this point we quote as follows from the testimony of the patentee appearing at R. p. —, as follows:

"My reamer had a tilting action, the cutters tilt on the keys so as to allow the cutters to close





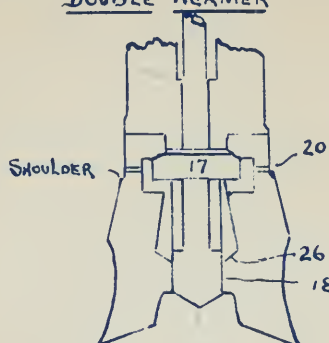
BROWN CUTTERS

NOTE POCKET

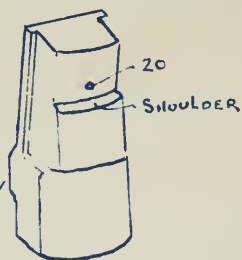




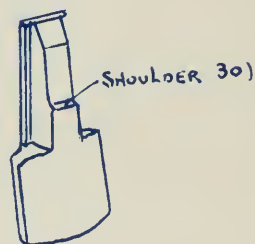
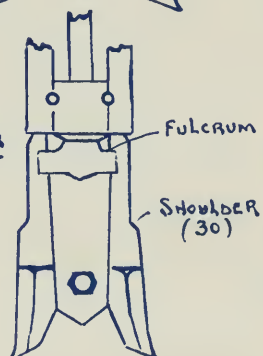
# DOUBLE REAMER



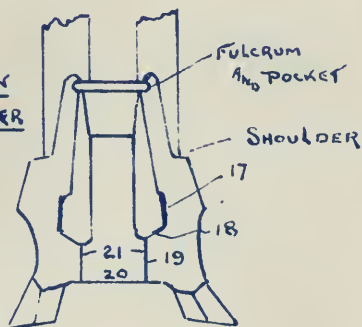
# DOUBLE CUTTER



# WILSON REAMER



# BROWN REAMER



around the end of the underreamer, so as to collapse.”

Also R. p. —, as follows:

“They” (cutters) “would slide in and out so as to allow the cutters to partake of a tilting action around this central spreading bar of the reamer.”

This makes it clear that the cutters of the Double patent are suspended so as to produce the same sliding action as occurs with the cutters of the Brown patent and that, therefore, Double produced nothing novel in this respect over the Brown patent, an underreamer constructed in accordance with which, as the record shows, was in possession of Double prior to the alleged Double invention.

This feature is referred to in the claims of the Brown patent as follows:

“Claim 1. \* \* \* and reaming tools *loosely* and *freely* detachably held at their upper ends in the upper portions of the recesses on opposite sides of the bar and connected to the lower end of the slide.”

“Claim 3. \* \* \* and reamers having shanks *loosely* and *readily* and *detachably engaging* the said slide \* \* \*”

The drawings plainly showing this contrivance would be sufficient evidence, in the eyes of the law, that the device had been previously patented even if it were not accurately described in the patent specifications.

“The state of a particular art, at the time of a particular invention, includes whatever inventions, belonging to that art, had already been invented and used in the United States, or patented, or described in any printed publication, in any country. And an invention is patented in the eyes of this law, where it is fully shown in the drawings of a patent, though not described in the specification.” Walker on Patents, Section 184.

“Every inventor or constructor is presumed by the law to have *borrowed* from another, whatever he produces that was actually first invented and constructed or used by that other, in the United States; or was previously patented or described in any printed publication in any country, after having been invented by another.” Walker on Patents, Section 43.

“A drawing, in a prior patent or printed publication, if its meaning is really undeniable, may negative novelty in a later patent on a machine, manufacture or design.” Walker on Patents, Section 56, citing *Britton vs. White Mfg. Co.*, 61 Fed. 96.

Correcting this grievous misconception of the Brown patent by the lower Court, we may safely assume that Brown invented one “means” for “tilting the slips” and Double *used that* “means” in his device.

As establishing this see the following testimony of the patentee Double at R. p.—, as follows:

“XQ-182.

A. The Brown had no key for the cutters to slide on.



XQ-183. However, the upper ends of the cutters would slide upon the parts you call the brackets in the Brown device; is that not so?

A. Yes."

Had Double invented a means of tilting the slips he would have put in a separate claim to cover it and we may reasonably assume that his claim would have been allowed by the Commissioner of Patents.

Again, in his decision, the lower Court says:

"The Brown reamer (No. 687,296) is, doubtless, the closest in essential principle of anything in the prior art to the patent in suit, for the cutter is adapted to both slide upon an interposed portion of the body, provided with parallel bearing faces for that purpose, and as the cutters slide down upon this face, they collapse inwardly over the lower end of the extension, which they are enabled to do directly because of the fact that the cutters, on their inside faces, are provided with a recess for the accommodation of the enlarged lower end of the body, and they are further so enabled to collapse because they hang free upon a spring actuated device in the interior of the reamer. But they are suspended—not by means of a key-seat in a recess in the shank of a cutter larger than the key, as in the patent in suit, but the upper end of the cutter shank is formed into an inner shoulder hooked over an exterior shoulder upon a spring actuated box open at the lower end, allowing it to travel downward with the cutters, over an interposed portion of the body."

This unfortunate misstatement of the construction and operation of the Brown underreamer was made

by the lower Court to substantiate his conclusion that these differences in operation are sufficient to avoid anticipation.

It is incontrovertible that a proper understanding of this Brown patent will prove it to cover claims 2, 6, 7, and 8 in the Double patent, and in comparing them no such a broad range of equivalents need be applied as the lower Court has used in comparing the Double patent with the Wilson reamer. Here is "the same effect \* \* \* produced by substantially the same mode of operation" as contemplated in 5 *Bann. & A.*, 4, previously cited. In the three claims in the Brown patent the several parts of the combination have been designated and described by slightly different terms from those used in the Double claims, but the parts themselves, their modes of operation and the results they accomplish are substantially identical.

"In determining the question of infringement, the court or jury, as the case may be, are not to judge about similarities or differences by the names of things, but are to look at the machines or their several devices as elements in the light of what they do or what office or function they perform, and how they perform it and to find that one thing is substantially the same as another if it performs substantially the same function in substantially the same way as to obtain the result." *Machine Co. vs. Murphy*, 97 U. S. 120.

The same words are used in *Bates vs. Coe*, 98 U. S. 31, and this case has been freely used in the opposing counsel's brief before the lower Court:

“Devices in one machine may be called by the same name as those contained in another, and yet they may be quite unlike, in the sense of the patent law, in a case where those in one of the machines perform different functions from those in the other. In determining about similarities and differences, courts of justice are not governed merely by the names of things, but they look at the machines and their devices in the light of what they do or what office or function they perform, and how they perform it, and find that a thing is substantially the same as another, if it performs substantially the same function or office in substantially the same way to obtain substantially the same result; and that devices are substantially different when they perform different duties in a substantially different way, or produce substantially a different result. *Ca-hoon vs. Ring*, 1 Cliff, 620.”

It is perfectly plain that the Commission of Patents rejected the original form of the Double Claim No. 7—originally numbered 8—because it was an exact description of the Brown Patent, let alone the O'Donnell Willard reamer for which application was co-pending. It read as follows:

“In an under-reamer the combination of a hollow mandrel, a slip-carrying rod in said mandrel, slips connected to said rod, and means for tilting said slips.”

As allowed, it reads:

“In an under-reamer, the combination with a hollow mandrel, provided with a slotted extension, a spring-actuated slip operating rod provided with a pivot key, tilt slips provided with key-seats adapted to be engaged by said pivot key, said key-seats being somewhat larger than

the key to allow the slips to tilt, said slips provided with inwardly projecting shoulders, and said slotted extension provided with surfaces adapted to tilt said slips and hold the same in expanded position.”

The only reason which can possibly be advanced to justify the granting of this Claim 7 in its amended form, by the Commissioner of Patents, is that, in the opinion of the Commissioner, the detailed description in the amended claim narrowed the Double combination sufficiently to prevent its including the Brown combination and (let alone the O'Donnell & Willard combination) and confines the Double device to a combination containing the key slot (7) in the extension (6) and a removable key (17) in the spring-actuated device. The same reasoning demands that, in order to infringe the Double combination, the key slot in the downward extension and the removable key must be present in the infringing combination, and the Double claims must be construed strictly in this regard.

As to this voluntary limitation by an applicant in amending his claims, the Circuit Court of Appeals of this Circuit has said in *Marshall & Stearns Co. et al. vs. Murphy Manufacturing Co. et al.*, 199 Fed. at page 776:

“It is claimed that by reason of such abandonment there is in law no anticipation of Jordan's combination and that, therefore, he is entitled to the liberal construction of his patent which would be applicable if his original claims had been allowed. This proposition can not be

sustained. Acquiescing in the rulings of the officers of the Patent Office, Jordan, in order to obtain his patent, limited his claims, and it can make no difference with the result that the interfering application was withdrawn or abandoned. The limitations so imposed can not be disregarded.” (Citing *Lapham-Dodge Co. vs. Severin*, 40 Fed. 763; *Plecker vs. Poorman*, 147 Fed. 530; *American Stove Co. vs. Cleveland Foundry Co.*, 158 Fed. 978, 86 C. C. A. 182; *Johnson Furnace & Engineering Co. vs. Western Furnace Co.*, 178 Fed. 819, 102 C. C. A. 267; *Morgan Envelope Co. vs. Albany Perforated Wrapping Paper Co.*, 152 U. S. 425 and others.)

“In the case last cited, Mr. Justice Brown said: ‘but the patentee having once presented his claim in that form, and the Patent Office having rejected it, and he having acquiesced in such rejection, he is, under the repeated decisions of this court, now estopped to claim the benefit of his rejected claim, or such a construction of his present claim as would be equivalent thereto.’ ”

This decision was rendered in this Circuit by the Court of Appeals in 1912 and is a leading controlling decision in this Circuit.

In *O’Brien-Worthen Co. vs. Stempel*, 209 Fed. 847, syllabus by the Court, being the decision of Judge Sanborn of the Circuit Court of Appeals, Eighth Circuit, rendered December 11, 1913, it was held as follows:

“The patentee in letters patent No. 688,446, who described and claimed in his original petition for a patent on improvements in gum plasters, an elastic medicated suction cup, a suction cup adapted to contain a medicament in the form



of a pasty composition, a medicated piece of raw cotton and in any other form, and a rubber suction cup combined with an absorbent material for holding and retaining the medicament and who acquiesced in the rejection of all these claims on Rosell's patent, No. 624,545, and Kusnik's patent, No. 647,003, amended his petition and accepted a claim for an elastic cup to whose inner surface an absorbent lining for holding and retaining a medicament is securely fixed, is estopped from maintaining that this claim is infringed by the manufacture and sale of an elastic cup to whose inner surface a pasty composition consisting of dextrine, water, and the medicament oleoresin of capsicum, is applied and permitted to dry into a solid adhesive lining before its sale or use."

"If a patentee acquiesces in the rejection of his claims on references cited in the Patent Office and accepts a patent on an amended or substituted claim, he is thereby estopped from maintaining that the amended or substituted claim covers the devices or combinations shown in the references, and from successfully claiming that it has the breath of the claims that were rejected, but he is not estopped from claiming and securing by his amended claim every known and useful improvement which he has invented and which is not disclosed by the references."

Likewise in *Campbell vs. American Ship Building Co.*, 179 Fed. 498, decided by the Circuit Court of Appeals of the Sixth Circuit April 5, 1910, it was held that where an applicant for a patent acquiesces in the rejection of claims presented, and amends the same or substitutes others to meet the objections of the Patent Office, he must be deemed to have surrendered and disclaimed what he thus conceded, and



is bound by the limitations so imposed, and it is immaterial whether the Office was right or wrong in rejecting the original claims. After discussing the successive limitations through which a limited claim was finally substituted for the claims of broad import previously presented, the Court says on page 501:

“Thereupon, February 5, 1901, Campbell instructed the Commissioner to amend the new claim by erasing the word ‘parallel’ and inserting after the words ‘side walls’ the words ‘parallel throughout their entire length.’ On February 14, 1901, the claim as thus amended was rejected on reference to the Shone patent in connection with Jones patent, No. 221,412 of November 11, 1879. On March 16, 1901, Campbell again amended the claim by directing the insertion, immediately after the amendment of February 5th, of the words ‘and unobstructed from bottom to top.’ The claim was thereupon allowed by the Commissioner, and as so finally amended is as follows:

‘A cargo vessel having the double sides and bottom, and a central longitudinal trunk or hold unobstructed from front to rear, and having vertical side walls parallel throughout their entire length and unobstructed from bottom to top, substantially as and for the purpose set forth.’

What, then, is the true significance of the amendments? What, if any, limitations and restrictions do they impose? The rejection of the original claims was based upon the Shone patent, as before stated. That patent provides for a ship with an outer and inner hull, with intervening space in which either water or freight may be carried. The regular cargo hold is within the inner hull, with vertical sides, and with a number of cross bulkheads. This hold is given the shape of the bow as it approaches that por-

tion of the vessel; in other words, it has not parallel sides throughout its length. This was met by the first amendment of the specification, which provided for continuous vertical and parallel side walls. The second amendment of the specification discloses two distinct features. One is that the unloading device 'can pass up the vertical side walls of the hold without meeting any overhanging obstruction.' The other is 'that, the side walls of the hold being parallel throughout their length, the hatchway coamings may be utilized as rails for a traveling discharging apparatus, or rails may be secured to the deck beside these coamings, so that the apparatus may travel without interruption from end to end of the cargo space.'

Two amendments of the new claim, were, however, exacted and made before the examiner appears to have been satisfied that it was in correspondence with the features just pointed out. The first amendment of the new claim required that the side walls of the cargo hold should be vertical and parallel, not merely part of their length, but 'throughout their entire length,' and the second one required that the side walls should be 'unobstructed from bottom to top.' When these amendments are read in connection with the first amended claim, it will be seen in the first place that the shape of the new hold is defined with exceptional clearness and imperative exaction. It must be a 'central longitudinal trunk' extending 'from front to rear,' with 'vertical side walls parallel throughout their entire length.' In the next place, freedom from obstruction is made equally peremptory. The hold shall be 'unobstructed from front to rear,' and the side walls shall be 'unobstructed from bottom to top.' Since the mere form of a thing patented can be made of its essence, it will be difficult to conceive of language more clear and distinct, or

more calculated than this is to accomplish such a purpose. *Wener vs. King*, 96 U. S. 218, 230; 24 L. Ed. 613.

These latter requirements, like the others, were based on references to specified patents. These, in the judgment of the examiner, like the Shone patent in the first instance, were sufficient to warrant his rejections, and the effect was to induce Campbell to meet them with satisfactory amendments. It is not necessary to examine those patents with any purpose either of defining the prior art or of otherwise justifying the action of the Patent Office. It is sufficient that Campbell acquiesced in the rulings, instead of taking the prescribed course of appeal."

By cancelling claim 8 inserted by amendment and substituting narrow claim 7, as shown in file Wrapper and Contents of the Double patent in evidence in this case, Double acquiesced in the ruling of the Patent Office rejecting this broader claim 8, instead of taking the prescribed course of appeal. It is not necessary to examine the patents upon which this claim was rejected for the purpose of justifying the action of the Patent Office. It is sufficient that Double acquiesced in the rulings and cancelled this claim. Having done so he dedicated to the public the substance of that claim, and that claim 8 so cancelled was the only claim ever presented in this case of sufficient scope to even by implication dominate Defendant's device. Complainants cannot claim to have a monopoly for the mechanical territory between this cancelled claim 8 and the limited claim 7 substituted therefor, or the other limited claims of

the patent in suit. Double cannot now be heard to ask, in effect, to reinstate such cancelled claim 8. He is bound by his voluntary cancellation of it, and his patent monopoly is correspondingly cut down and attenuated to the very specific groups or combinations of elements covered in the claims of the patent. This estoppel of Complainants is an actual bar to this suit when the device of the Double patent is compared with the device of Defendant or of the Wilson patent. This will follow from the numerous decisions throughout this brief pertinent to proper interpretation of the Double patent.

In *Safety Oiler Co. vs. Scoville* (C. C.), 110 Fed. 203, 205, Judge Coxe said:

‘The contention that the patentee was not called upon by anything in the prior art to limit the claim as stated is wholly immaterial, where here is no escape from the conclusion that he has so limited it. The law in such circumstances is too plain to admit of doubt.’

In *Brill vs. St. Louis Car Co.* (C. C. A., 8th Cir.), 90 Fed. 666, 668, 33 C. C. A. 213, 215, Judge Thayer said:

‘It is immaterial, we think, whether the Patent Office was right or wrong in rejecting the complainant’s original claims on the ground that the invention therein described was anticipated by the prior art. By amending his specification and claims, the complainant admitted, in effect, that some limitations were necessary; and it is now too late to assert that he was entitled to his original claims or that the claims as finally allowed are as broad as the original claims.’

In *American Stove Co. vs. Cleveland Foundry Co.* (C. C. A., 6 Cir.), 158 Fed. 978, 983, 86 C. C. A. 182, 187, Judge Severens said:

‘The applicant had a long struggle in securing his patent, and was constrained to trim away, modify and otherwise define his specifications and claims to meet the references made by the office until they were brought within very narrow limits before his patent would be allowed. He must be deemed to have surrendered and disclaimed what he conceded, and to have imposed such definition upon the language of the patent as he attributed to it in order to secure the grant.’

In *Morgan Envelope Co. vs. Albany Paper Co.*, 152 U. S. 425, 429, 14 Sup. Ct. 627, 629, 38 L. Ed. 500, Mr. Justice Brown stated the rule thus:

‘It is insisted in this connection, however, that under the words ‘substantially as described’ the patentee is entitled to claim a band of oval or oblong shape, and that, looking at his specification and drawing in connection with the claim, it is obvious that the latter should be so limited. But the patentee having once presented his claim in that form, and the Patent Office having rejected it, and he having acquiesced in such rejection, he is, under the repeated decisions of this court, now estopped to claim the benefit of his rejected claim, or such a construction of his present claim as would be equivalent thereto.’

See, also, *American Graphophone Co. vs. Universal Talking Mfg. Co.*, 151 Fed. 595, 605, 81 C. C. A. 139:

‘It inevitably follows that the language into which the grant of the present patent was ulti-



mately resolved must be interpreted with constant reference to the limitations and restrictions imposed, and with respect to the matters distinctly excluded through rejection and amendment. As said by Justice Blatchford (if, indeed, further citations were necessary), in *Roemer vs. Peddie*, 132 U. S. 313, 317, 10 Sup. Ct. 98, 99, 33 L. Ed. 382:

‘This court has often held that when a patentee, on the rejection of his application, inserts in his specification, in consequence, limitations and restrictions for the purpose of obtaining his patent, he can not, after he has obtained it, claim that it shall be construed as it would have been construed if such limitations and restrictions were not contained in it.’

Again, in *Shepard vs. Carrigan*, 116 U. S. 593, 597, 6 Sup. Ct. 493, 495, 29 L. Ed. 723, it was said:

‘Where an applicant for a patent to cover a new combination is compelled by the rejection of his application by the Patent Office to narrow his claim by the introduction of a new element, he can not after the issue of the patent broaden his claim by dropping the element which he was compelled to include in order to secure his patent.’

We may now consider the question of infringement. Defendant, as its name indicates, is a ship building company. The type of boats constructed by that company, which are said to infringe the patent in suit, are in many respects similar to the boat described in the Campbell patent. We understand it to be conceded that no vessel has ever been constructed according to the Campbell patent, and we must therefore refer to the Letters Patent for purposes of comparison. Apart from some obsolete boats of defendant, which do not seem to be in controversy,



none of defendant's boats has a cargo hold with 'vertical side walls parallel throughout their entire length.' The holds of all the boats in dispute converge toward the bows. If nothing else were said, it is plain that the hatchway coamings could not 'be utilized as rails for a traveling discharging apparatus,' nor could rails 'be secured to the deck beside these coamings,' so that the apparatus might 'travel without interruption from end to end of the cargo space.'

This would be equally true, if, as claimed, the engine were placed amidship (assuming this to be still allowable) and two longitudinal trunks or hoppers were maintained; for surely each of two holds, no less than one hold, would have to conform to the requirement mentioned, and yet the portion of the hold converging at the bow would quite as clearly prevent the use aforesaid of the coamings or adjacent rails as the same portion would if a single hold were provided and the engines were placed, as it is stated they preferably should be, either forward or aft of the cargo hold. It cannot be rightfully said that the plan described for carrying the discharging apparatus along the coamings or adjacent rails is unimportant, because it will be recalled that this feature was definitely described in the first amendment made. Furthermore, the first amended claim specified 'a central longitudinal trunk or hold unobstructed from front to rear.' It is true, as before shown, that in rejecting the first amended claim the examiner in substance stated that the Corey patent shows a central longitudinal hold unobstructed from front to rear, having vertical side walls, and that to make these continuous as shown by Shone would not involve a matter of invention; but, in view of the fact that this form of unobstructed trunk was retained in the claim after it was further so amended as to satisfy the examiner, it can

hardly be said that such a trunk was not an essential element of the Campbell combination as finally amended.

This amended provision was for one hold, not for two or more holds. It might therefore be hard to reconcile it with the old provision allowing the engines to be placed amidships. But still assuming that right construction might, despite the contradiction, admit of two holds, one forward and one aft of the engines, there is another feature of all of defendant's boats, except the Wolvin, which we think must differentiate them from Campbell's amended design. Those boats all have transverse vertical bulkheads, dividing the holds into a number of cargo compartments. It would be manifestly impracticable to operate any discharging apparatus along the coamings or adjacent rails with such bulkheads interfering at frequent intervals. It is said, however, that the clam-shell grabber could be used to unload the vessels; but that device could be employed for the same purpose respecting a single hold, as well as a plurality of holds. Besides, the contention ignores the obvious purpose of inserting the requirement, at the time the amendment was made, concerning the use of a discharging apparatus to be carried along the coamings or adjacent rails. The insistence of counsel concedes that bulkheads might have been used under the original and rejected claims; but it ignores the fact that one of the reasons for the first rejection must have been that the Shone patent provides for compartment bulkheads, and so anticipated Campbell's original application in this very particular. As pointed out in some of the decisions before cited, Campbell could not, in order to secure his patent, surrender the right to maintain bulkheads and cargo compartments, only

to lay claim to the same right after the patent was issued.

But there is another distinction between defendant's boats and the Campbell design that must be noticed. It is found in the last amendment. It will be remembered that one of the amendments required the side walls of the hold to be vertical and parallel throughout their entire length, and that the exaction of the last amendment was that they should also be 'unobstructed from bottom to top.' This was made necessary, in the opinion of the examiner, by reason of a prior patent. When this provision is considered, in connection with the other provisions of the claim as amended finally, it clearly discloses a purpose to have the hold unscreened and open at the top, certainly when being unloaded. This would be necessary, as shown, also, in the opening paragraph of the original specification before quoted, when operating the discharging apparatus along the coaming or adjacent rails.

Above all, an open trunk is made necessary by the amendment which reads:

'From this construction it results that in unloading the cargo the discharging bucket or other apparatus can pass up the vertical side walls of the hold without meeting any overhanging obstruction, so that any cargo lying close against these side walls can be readily got at.'

Now, all of defendant's boats, including the Wolvin, have what is called an 'overhang' extending along each side of the cargo hold. It is testified without apparent contradiction that part of the cargo in the trunk lies underneath this overhang; also that a discharging bucket or other apparatus would not pass up the side walls of the hold without encountering this overhanging construction. Moreover, all of defend-

ant's boats have at frequent intervals deck or tie beams, which form part of the permanent construction and extend across the holds from side to side to strengthen the vessels. Clearly the holds of such vessels could not be converted into open troughs like those described in the Campbell design. Even though the removable hatch tie-beams of the latter design were intended to be and still could be permanently fastened to the sides of the holds, no continuous overhang like that in each of defendant's boats would be present. But enough has been said to differentiate defendant's boats from the Campbell design, unless it be the Wolvin.

The design of the Wolvin is in all respects like that of the rest of defendant's boats, with these exceptions: While its plan contemplated eight bulkheads, only six were originally put in place, and none of these were compartment bulkheads. Two of defendant's witnesses testified that bulkheads were built into the cargo hold later; but the date, if not the fact, of doing this is disputed. We think, however, the preponderance of evidence shows that they have since been put in place; and since the Wolvin possesses other features of difference we regard the temporary omission of the bulkheads as unimportant. The only other difference is that the walls of the Wolvin's cargo hold are not vertical. The hold is narrower at its floor than it is at its top. A projection extends along each side of the hold from the floor for some distance upward, where it slopes outwardly to the sides and widest portion of the hold.

It is earnestly insisted that the fact that the side walls of the Wolvin are not vertical is of no importance. Ordinarily this would be true, as in principle laid down in one of the cases relied on by plaintiff's counsel. *Winans vs. Denmead*, 15 How. 330, 14 L. Ed. 717. No rejection or amend-

ment, however, was made of the application in that case, and consequently no restriction imposed in that way upon the language of the patent had to be considered. But, in view of the other differences between the Wolvin and Campbell's design, we need not pass upon the one relating to the side walls of the cargo hold. Indeed, careful consideration both of the facts and the law constrains us to hold that the history of this application in the Patent Office requires the invention to be limited to the design described in the patent, and that, yielding to its validity for the purposes of this decision, there is no infringement.

The decree below must be affirmed, with costs."

This decision fully discusses this doctrine of estoppel of the patentee to claim anything broader than the claims as voluntarily formulated and limited by him in the prosecution of the application for the patent, and was one of the authorities cited by Judge Gilbert of the Circuit Court of Appeals of this Circuit in *Marshall & Stearns Co. et al*, vs. *Murphy Manufacturing Co. et al*, *supra*.

The decision of Justice Blatchford of the Supreme Court in *Roemer vs. Peddie*, 132 U. S. 313-317, is seen among the citations in addition to 152 U. S. 425, cited in *Marshall & Stearns Co. et al*, vs. *Murphy Manufacturing Co. et al*, *supra*.

See also *Condit Electrical Manufacturing Co. vs. Westinghouse Electric & Manufacturing Co.*, 200 Fed. 144, a decision of the Circuit Court of Appeals



for the first Circuit, rendered November 6, 1912, in which it was held at page 147:

“It is well settled that a patentee, having acquiesced in the rejection of a claim, is estopped to claim the benefit of his rejected claim, or such a construction of his present claims as would be equivalent thereto.” (*Morgan Envelope Co. vs. Albany Perforated Paper Co.*, 152 U. S. 425, cited in *Marshall & Stearns Co. et al. vs. Murphy Manufacturing Co. et al.*, *supra*).

Also in *Automatic Switch Co. vs. Monitor Manufacturing Co. et al.*, 180 Fed. 983, is was said on page 989:

“Should this claim be so understood? It is possible to put such a construction upon its words provided the Patent Office history of the patent is ignored. Even, then, the meaning which the complainant would give to the claims is not the obvious or more natural import of its language. But the Patent Office file wrapper has been put in evidence. It shows that the original application for this patent contained a claim numbered 2 \* \* \* it was rejected by the Patent Office examiner. He said it was too broad in view of Cook 597,265 \* \* \* Herdman, 603,-849 \* \* \*. Each of these patents shows a switch in which the armature circuit remained closed when the supply circuit contact blades had been moved to the stop position. The patentee then cancelled the original claim No. 2, and substituted therefor the following: \* \* \*. This amended claim was also rejected, as fully anticipated by Shepard & Herdman. The patentee then cancelled the amended claim No. 2, and gave up the effort to get a claim which would cover a switch in which the supply circuit contact blades were not required to move



past the stop position. In the defendant's devices alleged to infringe the supply circuit contact blades do not move past the stop position \* \* \*. But, in spite of this fact, I do not think the complainant can now be heard to say that the first claim of the patent in suit is infringed by any device in which the contact blades do not move past the stop position. In so saying it is in effect asking that claim No. 1 shall now be given a meaning as broad as the original claim No. 2. This the law will not permit. A patentee who has originally sought broader claims which were rejected and who has acquiesced in such rejection can not under the authorities be allowed to insist upon such a construction of the allowed claims as would cover what had been previously rejected." (Citing *Roemer vs. Peddie*, 132 U. S. 317, *supra*.) I am therefore of opinion that the defendants do not infringe claim 1 of patent 716,504."

It will be seen that this clearly and repeatedly enunciated law with accuracy sets the circumstances of the present case. The invention was never claimed by Double in any broad aspects, and even the limited form in which the claims were originally presented had to be made still more limited in order to point the extremely minute features of improvement introduced within the art by the alleged inventor. In 179 Fed. at page 501, *supra*, we find at the top of this page that the inventor instructed the Commissioner of Patents to amend the new claim by erasing the word "parallel" and inserting after the words "side walls" the words "parallel throughout their entire length." And that the claim even then was rejected and a further amendment was made by inserting

other restricting language. This is the procedure that Double or his attorneys took. He voluntarily inserted language which in its plain import restricts his patent to a narrow territory outside of which Defendant's entire structure falls.

A further leading authority on this point is that of *Westinghouse vs. Boyden*, 170 U. S. 568, the doctrine of which case stands today and makes it impossible that Double or his attorney ever intended to claim and likewise that this Court could find that the Double patent does cover and claim anything further than the very specific structural parts named and specified in the claims relied upon in this suit. As one Court has said, the patentee has open to his use for the selection of terms definitive of his invention all of the pages of the dictionary, and if he elects to define his invention in terms specific of certain particular parts, no charitable interpretation of the doctrine of equivalents can be employed to make over the claim into some different intent and meaning. The law never contemplated that it is necessary for a manufacturer to consult anything but a given patent to determine whether it is so drawn as to cause his possible prospective acts to infringe such patent. While the appellee will contend that more or less extensive adoption of the Double underreamer tends to establish the invention as of importance, it was not incumbent upon appellant to consider such adoption in addition to the very terms of the Double patent claims themselves. The rejected claim 8 of the Double application used broad lan-

guage regarding the tilt of the cutters. This was inclusive language, but it was stricken out and the most specific language substituted. No attempt was made to halt half-way. The patentee went from Zenith to Nadir and cannot rise to a higher level of monopolistic value of the claim. Clearly appellant does not use what the Double claims call for. Further important authorities of the U. S. Supreme Court we quote on this point as follows:

As patents are procured *ex parte*, the public is not bound by them, but the patentees are. If the office refuses to allow him all he asks, he has an appeal. But the courts have no right to enlarge a patent beyond the scope of its claim as allowed by the Patent Office, or the appellate tribunal to which contested applications are referred. When the terms of a claim in a patent are clear and distinct, as they always should be, in a suit brought upon the patent, the patentee is bound by it.—*Keystone vs. Phoenix*, 95 U. S. 274; 24 L. Ed. 344.

*Merrill vs. Yeomans*, 94 U. S. 568.

In this case the description of appellee's invention is much broader than his claim. It seems quite clear, from the present form of appellee's specifications, and from the fact that his application for a patent was twice rejected, that he was compelled by the Patent Office to narrow his claim to its present limits before the commissioner would grant him a patent. In doing this he neglected to amend the descriptive part of his specifications. He cannot go beyond what he has claimed and insist that his patent covers something not claimed, merely because it is to be found in the descriptive part of the specifi-

cations.—*Lehigh vs. Mellon*, 104 U. S. 112; 26 L. Ed. 639.

*Burns vs. Meyer*, 100 U. S. 671; *Keystone vs. Phoenix*, 95 U. S. 278.

In patents for combination of mechanism, limitations and provisos, imposed by the inventor, especially such as were introduced into an application after it had been persistently rejected, must be strictly construed against the inventor, and in favor of the public, and looked upon as in the nature of disclaimers.—*Sargent vs. Hall*, 114 U. S. 63; 29 L. Ed. 67; 5 S. Ct. 1021.

*Fay vs. Cordesman*, 109 U. S. 408;  
*Water Meter vs. Desper*, 101 U. S. 332;  
*Gage vs. Herring*, 107 U. S. 640.

If an applicant, in order to get his patent, accepts one with a narrower claim than that contained in his original application, he is bound by it.—*Shepard vs. Carrigan*, 116 U. S. 593; 29 L. Ed. 723; 6 S. Ct. 493.

Where an applicant for a patent to cover a new combination is compelled by the rejection of his application by the Patent Office to narrow his claim by the introduction of a new element, he cannot after the issue of the patent broaden his claim by dropping the element which he was compelled to include in order to secure his patent.—*Shepard vs. Carrigan*, 116 U. S. 593; 29 L. Ed. 723; 6 S. Ct. 493.

*Leggett vs. Avery*, 101 U. S. 256;  
*Goodyear vs. Davis*, 102 U. S. 222;  
*Fay vs. Cordesman*, 109 U. S. 408;  
*Mahn vs. Harwood*, 112 U. S. 354;  
*Cartridge vs. Cartridge*, 112 U. S. 624;  
*Sargent vs. Hall*, 114 U. S. 63.

Complainant is not at liberty now to insist upon a construction of his patent which will in-

clude what he was expressly required to abandon and disavow as a condition of the grant.—*Sutter vs. Robinson*, 119 U. S. 530; 30 L. Ed. 492; 7 S. Ct. 376.

*Shepard vs. Carrigan*, 116 U. S. 593, and cases there cited.

As the claim must be held to define what the Patent Office had determined to be the patentee's invention, it ought not to be enlarged beyond the prior interpretation of its terms.—*Day vs. Fair Haven*, 132 U. S. 98; 33 L. Ed. 265; 10 S. Ct. 11.

When applicant has limited his claim by including specific elements in his combination under rejection by the Patent Office he is limited thereby to his specific elements.—*Phoenix vs. Spiegel*, 133 U. S. 360; 33 L. Ed. 663; 10 S. Ct. 409.

*Roemer vs. Peddie*, 132 U. S. 313, and cases there cited.

A claim admitted by the Patent Office and acquiesced in by the patentee should not be enlarged by construction beyond the fair interpretation of its terms.—*Haines vs. McLaughlin*, 135 U. S. 584; 22 L. Ed. 241; 10 S. Ct. 876.

Must be read and interpreted with reference to the rejected claims and to the prior state of the art and cannot be construed to cover either.—*Knapp vs. Morss*, 150 U. S. 221; 37 L. Ed. 1059; 14 S. Ct. 81.

*Shepard vs. Carrigan*, 116 U. S. 593; *Sutter vs. Robinson*, 119 U. S. 530.

Where applicant has amended on rejection by Patent Office he is estopped to claim the scope of original claim.—*Morgan vs. Albany*, 152 U. S. 425; 38 L. Ed. 500; 14 S. Ct. 627.



Acquiescence in the rejection of a claim and restriction by amendment limits the construction of the claim to the device shown.—*Lehigh vs. Kearney*, 158 U. S. 461; 39 L. Ed. 1055; 15 S. Ct. 871.

*Knapp vs. Morss*, 150 U. S. 221.

His acquiescence in the rulings of the Patent Office indicates very clearly that he should be limited to the combination claimed, and that the case is not one calling for a liberal construction.—*McCarty vs. Lehigh*, 160 U. S. 110; 40 L. Ed. 358; 16 S. Ct. 240.

Whether the examiners were right or wrong in so holding (narrowly limiting the claim) we are not to inquire, as the claimant did not appeal, but amended his claim and accepted a grant thereof, thereby putting himself within the range of the authorities which hold that if the claim to a combination be restricted to specified elements, all must be regarded as material, and the limitations imposed by the inventor, especially such as were introduced into an application after it had been persistently rejected, must be strictly construed against the inventor and in favor of the public, and looked upon as in the nature of disclaimers.—*Hubbell vs. U. S.*, 179; U. S. 77; 45 L. Ed. 95; 21 S. Ct. 24.

*Union vs. Desper*, 101 U. S. 332; *Morgan vs. Albany*, 152 U. S. 425.

In order to get his patent, he was compelled to accept one with a narrower claim than that contained in his original application; and it is well settled that the claim as allowed must be read and interpreted with reference to the rejected claim and the prior state of the art, and cannot be so construed as to cover either what



was rejected by the Patent Office or disclosed by prior devices.—*Hubbell vs. U. S.*, 179 U. S. 77; 45 L. Ed. 95; 21 S. Ct. 24.

*Leggett vs Avery*, 101 U. S. 256; *Shepard vs. Carrigan*, 116 U. S. 593; *Knapp vs. Morss*, 150 U. S. 227.

In view of what passed in the Patent Office, and the state of art, we cannot regard the Kitzelman patent as a pioneer patent, but think its claims must be limited in their scope to the actual combination of essential parts as shown and cannot be construed to cover other combinations of elements of different construction and arrangement.—*Kokomo vs. Kitzelman*, 189 U. S. 8; 47 L. Ed. 689; 23 S. Ct. 521.

Where an inventor seeking a broad claim, which is rejected, in which rejection he acquiesces, substitutes therefor a narrower claim, he cannot be heard to insist that the construction of the claim allowed shall cover that which has been previously rejected.—*Computing vs. Automatic*, 204 U. S. 609; 51 L. Ed. 645; 27 S. Ct. 307.

*Corbin vs. Eagle*, 150 U. S. 38;  
*Hubbell vs. U. S.*, 179 U. S. 77;  
*Leggett vs. Avery*, 101 U. S. 256;  
*Shepard vs. Carrigan*, 116 U. S. 593;  
*Knapp vs. Morss*, 150 U. S. 221.

In connection with this discussion of the Brown patent the Court's attention is called to the testimony of Double corroborated by the certified abstract of title pertinent to the Double patent taken from the records of the Patent Office, that the owners of the Double patent bartered one-half of such patent for one-half of the Brown patent. This emphasizes the importance they attached to the Brown

patent and invention by raising the presumption that they were protecting themselves as against probable infringement of the Brown patent. Even Double admits that the owners of the Brown patent were threatening his company with suit for infringement at the time.

While the Double reamer, as we have seen, followed closely the Brown patent, *no such similarity exists as between the Double combination and the Wilson underreamer, as the latter does not have the downward extension (6), with its slot or key-way (7), nor the removable key in the spring-actuated tee-rod or "cross" shown in Figure 11 in the Wilson patent drawings. These elements of the Double combination are absent from the Wilson device and there is nothing in the Wilson combination that can be construed as their equivalents under the most liberal application of the doctrine of equivalents, if the patent were entitled to any such liberality.*

“‘An infringement,’ says Justice Grier in *Burr vs. Duryee*, 1 Wall. 532, 572, ‘involves substantial identity,’ whether that identity be described by the terms ‘same principle,’ same ‘modus operandi,’ or any other \* \* \*. The argument used to show infringement assumes that every combination of devices in a machine which is used to produce the same effect, is necessarily an equivalent for any other combination used for the same purpose \* \* \* *This is a flagrant abuse of the term ‘Equivalent.’*” *Westinghouse vs. Boyden Power Brake Co.*, 170 U. S. 568.

On the other hand, every feature of this tilting action in the Double reamer is to be found in the

Brown device. A close study of these underreamers will show that at the instant of collapsing of the cutters over the lower end of the downward extension, they “tilt” or “teeter” upon the “opposite parallel bearing faces” of the “downward extension” as a fulcrum. This tilting, as Double testifies, is permitted by the upper ends of the cutters moving outward as the lower ends collapse together, this action causing a sliding movement of the cutters upon the suspending key. Great emphasis has been placed upon this “tilting action” by the opposing counsel and the lower Court, and their arguments leave no room for doubt that this “tilting action” *is to be regarded as the distinguishing feature of the mode of operation of the Double underreamer*. The appellee rested his case on this point and the lower Court decided the case in his favor on this point, and this notwithstanding this feature was appropriated bodily from the Brown as well as the Jones reamer, and particularly the O’Donnel & Willard reamer patents.

The Appellant’s strongest answer to this argument is that *no such mode of operation is to be found in the Wilson underreamer* for the reason that in its collapsed position there is no portion of the mandrel interposed between the cutters to serve as a fulcrum for any “tilting” or “teetering” motion. The cutters of the Wilson underreamer do not “tilt” or “teeter” in the sense that the Double, Brown, Jones and O’Donnell & Willard and many others do. The cutters of the Wilson device, when collapsing, swing

pendulum-like together and pivot on the point of suspension, which is the integral "Tee" or "Cross" at the bottom of the spring-actuated rod. The upper ends of the shanks of the cutters are in precisely the same position with the cutters collapsed as when they are in the open or reaming position. *The Wilson cutters swing between the prongs or forks of the mandrel instead of tilting over a downward extension of the mandrel.* This mode of operation is original with Wilson and is covered by basic claims in his patent No. 827,595. We submit that the Appellee has failed to show that this mode of operation is substantially the same as that of the Double device or its predecessors, the Brown, O'Donnell & Willard, Jones and others which have been exhibited in this case, and *the burden of proof was upon the Appellee to do so.*

It is plain that the lower Court failed completely to understand this so-called "tilting" action, which he discussed in detail, and this was doubtless due to the confusion with which the Appellee succeeded in surrounding this important point.

That Double himself clearly understood the difference between the tilting action of the cutters and the suspending of the cutters for tilting action, as in the Double patent, and the pendulum action of the cutters as in the Wilson reamer and the Canadian reamer, is manifest from the following testimony of Double:

R. p. —, as follows:

“I don’t know whether the Canadian reamer cutters tilt or swing, according to their drawing. From the cut I cannot tell whether the cutters would tilt or swing. Looks as though these cutters would swing instead of tilt. It looks as if the pin going through that central bar went through both cutters.

XQ. 271. In other words, you would make it out that that pin was a fixed center for the cutters to swing on; is that it?

A. Yes, like a pair of scissors would be pivoted.

XQ. 272. Then the difference between that and tilting concerns the moving or sliding of the cutters on a key?

A. Yes.

XQ. 273. Is that it?

A. Yes.

The opposing counsel contends that the “tilting” action of the Double cutters is due to an important difference between the Double underreamer and all former underreamers, and says that this difference is to be found in the position of the slip shoulders which contact with the casing shoe to cause the slips to collapse. It is contended that in the Double underreamer these shoulders are located high up on the slips close to the key which acts as a fulcrum and that the location of these shoulders causes the sudden collapse of the cutters, or slips.

It is to be pointed out that, if this feature is important, it is strange that it should not have been the



subject of a claim in the Double patent. In this respect the Double device follows the principle of the Brown patent exactly, and also the Jones reamer. It can also be said, in order to elucidate this point still further, that the sudden collapse of the cutters in the Double and Brown underreamers is not due to the location of the shoulder on the cutter, as argued by opposing counsel, who does not seem to understand the operation of the Double device. This sudden collapse of the cutters in the Double underreamer is due to the fact that they do not collapse at all during their long downward movement when they are sliding upon the "opposite parallel bearing faces" of the "downward extension," except that slight collapse due to the outward travel of the upper ends of the cutters on the key. But when the "inward projections" of the slips pass off of these "opposite parallel bearing faces" the cutters collapse together instantly. This movement is identical with the collapsing of the cutters of the Brown underreamer and for the reason that it also has the "opposite parallel bearing faces" on its "downward extension" and "inward projections" on its cutters. See also the Yorke patent. The distance of the cutter shoulders below the fulcrum of the cutters has nothing to do with this movement whatever.

The Wilson underreamer does not have this mode of operation which causes the serious evil of "plunging" so detrimental to the operation of the Double and Brown underreamers. In the Wilson device the cutters begin to collapse the instant they contact with



the casing shoe and for the reason that the cutters bear against the prongs or forks on faces which “incline inwardly and downwardly” and not on “opposite parallel bearing faces.” The cutters of the Wilson underreamer collapse more rapidly at the lower end of their movement, but *they collapse from the beginning of the downward movement. To argue that these inclined bearing faces on the prongs or forks of the Wilson device are the equivalent of the “opposite parallel bearing faces” on the “downward extension” of the Double underreamer, when they eliminate such a grave evil as “plunging” is an abuse of the term “equivalent.”* See testimony Wilson, R. 160. Notwithstanding its simplicity this is an important feature of the Wilson underreamer and proves Wilson to be an inventor, and to have departed from what Double says is his invention, namely, opposite parallel bearing faces. Double put this imitation into his claim after the Patent Office cited the Swan patent, which has downwardly and inwardly-inclined opposite bearing faces. Double cannot prevent appellant from using what was old before Double.

We submit that the above considerations prove conclusively that the tilting means adopted for the collapse and expansion of the slips in the Double underreamer should have been included in the combination described by the lower Court as old in the art.

We are then left to the conclusion that all Double,

or his collaborator Jones, added to a previously-used combination was the then well known inter-related dovetails and that these are essential to the Double combination. This being the case how could the lower Court possibly find that claims 2, 6, 7 and 8 were infringed by the Wilson underreamer when these dovetails are not claimed, covered nor mentioned in any way in said claims? *The lower Court attempts to construe claim 1 of the Double patent so as to cover this combination of an element (the dovetails) and a mode of operation (the tilting action) but fails to show how claims 2, 6, 7 and 8 could be infringed by this hypothetical combination.*

The appellant strongly urged before the lower Court that the appellee is not entitled to a patent covering the combination of the dovetails with the means for securing the tilting action of the cutters in that the former is covered only by claim 1, and the latter by claims 6, 7 and 8. There being no claim in the Double patent covering both the dovetails and the means for securing the tilting action of the cutters. However, the lower Court justifies his decision that the appellee is entitled to a combination made up by grouping two or more claims of his patent, by the following remarkable statement:

“If defendant’s assumption were conceded, as long as the lesser combinations were covered by valid claims, no good reason appears—it being found that the entire combination is an invention of decided merit—for allowing only a narrow range of equivalents, although this course might be justified if each of the claims

was considered entirely independently of everything else than the prior art."

We confess that we are far from satisfied that we understand just what is meant in this involved sentence. It seems to say that the lower Court is privileged to group together the combinations of elements covered by individual claims to form a different and more embracing combination than is described in any single claim, if this new combination proves to have decided merit in operation. Also this feat is accomplished by some vague application of the doctrine of equivalents, and, if each of the claims in the Double patent were considered entirely independently of everything else than the prior art, the defendant (appellant) *might be justified in asking that the Double patent be limited to its claims*. In other words, if the prior art permits, the Court is at liberty to write and grant new claims. If our understanding of this sentence is correct we do not hesitate to say that this remarkable construction of the law is not supported by textbooks or decisions. We find that the authorities are unanimous in the opinion that a patent is limited to its claims and is no broader than its claims.

"The patentee was at liberty to describe his combination as he saw fit, having done so, the rights of the public are involved and the Court cannot construe the claims precisely as if all reference to the said printing surfaces were omitted." *Evans et al. vs. Hall Printing Press Co.*, 223 Fed. 539.

"The inventor can, of course, use any language he wishes in describing his invention and

in stating his claims. Having done so, however, he must abide by the phraseology chosen. It is then too late to reconstruct his claims by adding or subtracting from the language chosen. This rule may result in hardship in many cases but a contrary rule would work a far greater injustice *and would enable the patentee to hold as infringers those who have invested their capital in what they supposed, relying on the plain language of the patent, to be a perfectly legitimate business.* When the language of the claims of a patent is clear and distinct, the patentee is bound by it." *Keystone Bridge Co. vs. Phoenix Iron Co.*, 95 U. S. 274; 24 L. Ed. 334. *Merrill vs. Yeomans*, 94 U. S. 568; 24 L. Ed. 235.

"Some persons seem to suppose that a claim in a patent is like a nose of wax which may be turned and twisted in any direction, by merely referring to the specification, so as to make it include something more than, or something different from what its words express. The claim is a statutory requirement, prescribed for the very purpose of making the patentee define precisely what his invention is; and it is unjust to the public, as well as an invasion of the law, to construe it in a manner different from the plain import of its terms." *White vs. Dunbar*, 190 U. S. 51.

There can be no doubt that a patent is limited to the plain import of the terms of its claims and numerous other authorities could be cited if it were not presuming upon the time of this Court to do so. A study of the claims in the Double patent in suit will show that no single claim in that patent covers the combination of elements defined by the lower Court as comprising the Double device. *It is obvious*

*the lower Court formed its opinion of the Double combination of elements from a study of the Double underreamer and not from an analysis of the claims of the Double patent.*

Notwithstanding the remarkable conclusion of the lower Court which enabled him to combine two or more claims of the Double patent to include the combination of the tilting action of the cutters with the dovetail feature, he also states that:

“Claims numbered 1, 2 and 3, as originally proposed, were rejected by the Commissioner of Patents upon reference to the Swan patent and were only allowed upon their amendment and that of the specifications, the effect of the amendment being to make plain the tilting action of the cutters, or slips, *in addition to the inter-related dovetails and dovetail ways thereof upon the cutter shanks and body extension*, which latter were found in the Swan device. The effect of the amendment is made plain by an amendment required and made to the specifications and upon which the claims were allowed. This amendment is as follows:

“ ‘The sockets or key-seats (16) are somewhat larger than the key (17) to permit the slips (15) to partake of a tilting action, the key (17) thus forming a portion, on the rod (11), on which the tilt slips or bits (15) are loosely swung or pivoted, adapting their lower ends to tilt or swing in toward the center of the stock or mandrel portion to pass through the well-casing or to tilt away from the center to assume the proper position for reaming. The tilt-slips are provided with shoulders (18) adapted to slide upon a spreading portion provided in connection with the mandrel-body’.”



After much careful study of these amendments and claims we fail to see that this amendment makes plain in claims 2 and 3, (claim No. 3 is not included in this suit) the tilting action of the cutters *in addition to the inter-related dovetails and dovetail ways thereof upon the cutter shanks and body extension*. No reference whatever is made in claims 2 and 3 of the Double patent to the inter-related dovetails and dovetail ways any more than is made in claim 6. Claim 2 refers to "tilt-slips slidingly connected with the mandrel" but it is difficult to find a type of underreamer in which the cutters or slips are not slidingly connected with the mandrel. This description does not limit the combination to cutters with dovetails fitting into dovetail ways on the mandrel and, in the absence of such specific language, it certainly cannot be contended that this claim clearly describes the combination of elements which the lower Court has defined as comprising the Double invention.

The only claims in the Double patent which mention the dovetail feature are claims 1, 4 and 5. Claims 4 and 5 are not included in this suit and therefore will not be discussed. As to claim 1 the lower Court decides as follows:

"Defendant's contention in this particular (that no claim of the patent covers both the dovetail feature and the tilting action of the cutters) is based on a false premise. Claim 1 covers both the dovetail ways on the body, co-acting with the dovetails on the slips or cutters, *and means for the expansion and collapse of the*



*cutters over the lower end of the extension.* The following language of the claim covers the latter feature:

“‘Said slips being furnished with inward projections to slide *upon the downward extension of the mandrel* to spread apart the cutting edges of the slips when the slips are drawn up’.”

“*It is obvious that, if the cutters spread when drawn up, they would collapse on being drawn down.* That this claim not only covers the dovetail slips and ways, but such expansion and collapse of the cutters and the means for its accomplishment is further shown by the paragraph of the amended specifications above quoted, upon which amendment the Commissioner of Patents allowed claims 1, 2 and 3.”

Immediately preceding this quotation in the decision of the lower Court, the statement was made that when the cutters of the Brown patent were drawn up they would spread *but that they would not necessarily collapse when drawn down.* While this statement was incorrect, when applied to the Brown underreamer, as has previously been shown, we agree that it is not at all obvious that because the cutters of an underreamer spread when drawn upward they must necessarily collapse when drawn downward unless means are provided which cause such action. The above claim certainly does not describe any means of producing a “tilting action,” which the lower Court states was the invention of Double, and this “*claim is a statutory requirement, prescribed for the very purpose of making the patentee define precisely what his invention is; and it is unjust to the public, as well as an invasion of*

*the law, to construe it in a manner different from the plain import of its terms."* (*White vs. Dunbar*, 119 U. S. 51.)

Claim 1 does not cover, and no other claim covers, *both* the inter-related dovetails and the tilting means which the Court says was Double's invention. We have seen he did not invent it. Why *should* he claim it? It should not be insisted that he do so.

It is perfectly plain that, whoever drew up the claims of the Double patent, he did not have in mind the combination of elements described in the appellee's brief before the lower Court and which has been accepted by the lower Court as comprising the Double invention. It is plain that if Double had believed that "the chief novel feature of his invention was the tilting means adopted for the collapse and expansion of the cutters—in combining that means with inter-related dovetails on the cutters and ways of the body extension," as stated by the lower Court, *he would without any question, have made certain that the relation between these two operative features was specifically and unmistakably described in the claims of his patent.* The phrase in claim 1, quoted by the lower Court and upon which he bases his decision that the claim covers these two features, is not even an accidental reference to this relationship and no such a construction can be said to be "the plain import of its terms."

Enough has been said to show that the hypothetical device, described by the lower Court and

upon which he bases his decision, is not covered by the claims of the Double patent, nor was it contemplated by the inventor of the Double underreamer.

In our attempt to arrive at exactly what elements are included in the Double combination patent we will next consider what, in the opinion of opposing counsel, this invention covers. In his brief before the lower Court the following statements occur (official transcript of argument):

“The open slip-ways and the cutter shanks in these slip-ways so interrelated that the casing-shoe may contact with the outer surfaces or shoulders of the shanks close to the fulcra and cause the necessary amount of inward throw of the lower ends of the cutters; also the interrelated dovetails of the cutter shanks and slip-ways. These are found in the Double invention for the first time. These are part of the combinations claimed by the Double patent \* \* \*.”  
P. 15, line 8.

“The ‘tilt-slip’ action of the Double invention is secured by this novel conception of the open slip-ways and the outwardly extending portions of the cutter shanks for contact with the casing-shoe, and the provision of the key-seats or sockets (16) of somewhat larger size than the key or head of the rod for carrying the cutters. This combination existed in no prior reamer.  
\* \* \* The further provisions of the interrelated dovetails on the slip-ways and cutter shanks, in connection with this ‘tilt-slip’ action is not found in any prior underreamer. It was a novel combination produced by Mr. Double.”  
P. 16, line 1.

“Contact of the casing-shoe high up on the shanks of the cutters was necessary to secure the necessary amount of inward throw of the lower ends of the cutters in collapsing. Mr. Double conceived this. The difference between the open slip-way construction and the socket form is radical. One spells inoperativeness and failure and the other success.” P. 14, line 3.

“The principle of extending the shanks of the cutters through the sides of the body in these open slip-ways so that the casing-shoe may contact with the outer sides of these shanks high up about (above) the cutting edges and close to the fulcrum of the cutters on the spring-actuated rod is not utilized in this O'Donnell & Willard Patent. These were new and novel to Double. They were a part of Double's contribution to the art.” P. 13, line 2.

These are the only statements in the brief of opposing counsel before the lower Court which seem intended to define the Double invention. We find them to be the same as the description of the Double patent given by the lower Court in its opinion and which has been fully commented upon herein. It is plain that the lower Court accepted without question the combination of elements described by opposing counsel as making up the Double underreamer. “The tilting means adopted for the collapse and expansion of the cutters—in combining that means with the inter-related dovetails on the cutters and ways of the body extension.” The opposing counsel merely explains further that this ‘tilting means’ consists of such modification of cutter and shank as will permit the casing-shoe to contact with the shank

high up above the cutting edge and close to the fulcrum upon which the tilting action occurs—that is, close to the key which suspends the slips.

It is true that in the Double patent drawings the shoulder on the slip or cutter (just below the hole marked 20) and which contacts with the casing-shoe to cause the cutters to collapse, is almost opposite the key 17 by which the slips or cutters are suspended. It was imperative that this shoulder be placed at this point, for to place it lower on the cutter would require removing more of the stock from the outside of the cutter where it had already been dangerously weakened by the removal of material from the inside to furnish the inward projection 18 with its upwardly sloping face 26. *This was the object of having the casing-shoe contact with the cutters at a point high up above the cutting edges and close to the fulcrum of the cutters on the spring actuated rod. No tilting action was so obtained that had not already been obtained in the Brown underreamer and the Jones round nose underreamer and no advantage was obtained by this design other than to strengthen the cutters.*

On the other hand, a careful study of the patent drawings will show that, in the Wilson underreamer, the shoulder 30 on the cutter shank is some distance below the point of suspension of the cutter on the cross or tee 5, and in this respect following the design of the Brown cutter. This is possible in the Wilson underreamer because the shoulder can be



placed *anywhere* on the cutter shank without weakening the cutter as there is no stock removed from the inside to leave the inward projection 18 which is a feature of the Double patent and mentioned in its claims as one of its elements. The same result was accomplished in the Brown patent by making a head 20 on the downward extension 7, with opposite, parallel bearing faces 21. It was then necessary only to cut a recess or notch 17 in the shank of the cutter to receive this head when the cutters were collapsed, and this notch also formed the inward projection 19 to bear upon the opposite, parallel bearing faces 21, and the equivalent of the downwardly sloping upper faces 26 of the inward projections 18 in the slips 15 of the Double underreamer.

The next point mentioned by the opposing counsel in the Double combination is, as quoted above, "the principle of extending the *shanks* of the cutters through the side of the body in these open slip-ways" which he says is to permit of placing the shoulder on the slip up opposite the fulcrum or key. It has been shown that this was necessitated in order to prevent weakening the already dangerously weakened cutter—a condition which does not exist in the Wilson underreamer and therefore the shoulder may be placed *in a more advantageous position* to accomplish its work—which is lower down on the cutter shank and directly opposite the work that is to be done.

Referring now to the principle of extending the shanks of the cutters through the sides of the body in

these open slip-ways, the slips in the Double underreamer in suit did not contain *shanks* in any sense of that word, nor was the word *shank* used anywhere in the specifications or claims of the Double patent. The slip-ways were open in the same sense that they were in the Swan, the Jones' Round Nose, and several other older underreamers and, following the designs of these underreamers, the slips in the Double underreamer were as broad at the top as they were at the bottom or cutting end. *Shanks* were not necessary to its construction because the cutters did not collapse between forks or prongs projecting from the mandrel as in the Wilson device, nor pass inside of the mandrel at their upper ends as in the Brown design. This design of the slips in the Double underreamer caused it to have the same fatal defect as characterized the Swan patent, namely, the narrow cutting edges of the slips failed to cut a round hole and the hole became 'rifled' or 'key-seated' as it is called in the art. (See opinion in *Wilson vs. Union Tool Co.*, 237 Fed.) This defect in the Double underreamer was not remedied until the Wilson device, containing cutters with shanks and a broad cutting head, was placed on the market, and Double promptly copied this feature in his several 'improved' designs which have been held to be infringements of the Wilson patent in Consolidated cases A4 and B62 (237 Fed., *supra*). *Wilson and not Double is the inventor of the principle of extending the shanks of the cutters through the sides of the body in these open slip-ways, and for the reason that the Double slips did not have*

*shanks* in the sense of that term as the opposing counsel would have this Court understand.

Double's shankless cutters at all times, open or collapsed, are separated by and bear against the solid face of the bottom of the slip-ways, namely, the opposite parallel bearing faces of the hollow slotted extension, precisely as in the Swan underreamer, for example, while the Wilson underreamer at no time has anything between the *shanks* of the cutters, expanded or collapsed, except the spring-actuated cross or tee rod.

While neither Double's underreamers nor his patent specifications or claims contain or mention the word "shanks," Wilson was granted claims covering this unique, novel and revolutionary feature of his device. Attention is called to the following claims of the Wilson patent:

"Claim 16. An underreamer cutter having two shoulders and a bearing face on the inner side of each of the two shoulders of the cutter.

"Claim 17. An underreamer cutter having a *shank* and a shoulder on either side of the *shank* of the cutter, each of said shoulders projecting at right angles to the shank of the cutter and having a bearing face on its inner side."

From this analysis of the opposing counsel's statements of the elements which make up the Double combination it will be seen that he evaded the description of the Double combination as given in the

claims of said patent and, *from a confusion of its mechanical parts and modes of operation, has constructed a new combination not even remotely described in those claims.* Had the appellee believed that the claims of the Double patent were infringed by the Wilson underreamer, he would have based his case upon the combinations described in those claims and would have made clear the elements comprising those combinations, instead of reconstructing the claims to fit the Wilson reamer, and departing from the Double claims.

The only way to arrive at precisely what combination of elements are covered by the Double patent is to carefully analyze the claims of that patent. First, however, we will briefly outline the history of the Double underreamer and the present litigation as shown by the evidence in this case.

The Double underreamer appeared on the market about the time that deep well drilling became imperative in California because of the exhaustion of the shallower territory. This was about in 1901 and 1902. As shown by the evidence, it soon enjoyed a certain amount of sale and doubtless had some advantages over many of the underreamers then on the market. However, it also had many grave defects of design and construction so that, also as shown by the evidence in this case, it failed to displace, and was obliged to compete with, a number of the older designs of underreamers, such as the Swan, Austrian, Plotts, North and Kellerman. These defects will be enlarged upon later in this brief.

Much evidence has been introduced by the appellee to show that the advent of this underreamer immediately caused a greatly increased development of the oil fields throughout the country, but this is only an attempt to have the effect mistaken for the cause. The fact is that, beginning about in 1902, the oil industry in California enjoyed a wonderful growth. The following table prepared by the California State Mineralogist gives the total production of petroleum for the years specified:

1898	2,248,088	barrels
1899	2,677,875	“
1900	4,329,950	“
1901	7,710,315	“
1902	14,356,910	“
1903	24,340,839	“
1904	29,736,003	“
1905	34,275,701	“
1906	32,624,000	“
1907	40,311,171	“
1911	78,195,000	“

To argue that the Double underreamer was responsible for this enormous growth of the oil industry in California is to ignore altogether the remarkable development of the market for oil in this territory. It would doubtless be shown that the types of underreamers antedating the Double patent also enjoyed increased sales due to this prosperity. The record shows large sales for the Austrian at this time. The lower Court finds that: “By the



use of the Double underreamer a much greater depth was attained, not infrequently twice as deep as formerly." This was not due to the underreamer but to the demand for oil.

During the earlier history of the oil fields of California the shallow portions of the fields were being exploited and, as this shallow territory became exhausted, and the demand for oil increased, the drillers followed down the dip of the oil-bearing strata with deeper and deeper holes. The exhaustion of the shallow territory and not the Double underreamer caused the drillers to requisition every device known to the art in order to reach the oil strata below the horizons where the oil had been exhausted. As this exploration work extended deeper and deeper and drillers gained experience and overcame the difficulties confronting them. Heavier casing was found to be necessary and the calf-wheel was invented to handle it. The inventor of the calf-wheel, Mr. Kellerman, who has testified in this case, also invented a practical underreamer. This deep well drilling was also facilitated by the use of wire drilling rope, which made possible the use of heavier drilling tools. Underreamers were only one of many devices which minimized the difficulties of deep drilling.

Improvement continued to be made in the design of underreamers until the Wilson device was produced. It promptly rendered obsolete the original Double type which is the subject of this suit, and it

has enjoyed rapidly increasing sales until now it, and its imitations manufactured by the Appellee, and which have been adjudged to be infringement of the Wilson patent, have practically displaced all other makes of underreamers.

As inventions it must be conceded that the use of the heavy casing, the calf-wheel rig and the use of wire drill rope contributed more to the success of deep well drilling than did any type of underreamer, although it is to be admitted that the Double underreamer enjoyed a great sale after it was modified to closely resemble the Wilson patent with which it was unable to compete with any degree of success until such modification had been made.

That the Double underreamer was only a step in the art is obvious from the great popularity that attended the introduction of the Wilson underreamer, and the fact that the Appellee and its predecessors promptly copied its salient features and discontinued the manufacture of the design covered by the patent in suit. *This modification of the original Double type is known as the Double Improved Underreamer, and it is highly significant that the Appellee exhibited an underreamer of this type in the lower Court and represented it to be the device illustrated and described in Patent No. 734,833; and it was necessary for the Appellant to search the country for, and exhibit before the lower Court, an underreamer of the original and rejected and obsolete type covered by the Double patent in*

*suit.* This Appellee was not anxious to exhibit an underreamer of the type described and covered by the patent in suit but submitted, as an example of that underreamer, a totally differently device following the teachings of the Wilson patent and which has since been pronounced by the lower Court to be an infringement of the Wilson underreamer patent. This was a foxy but flagrant misrepresentation directed at convincing the Court that Appellant's underreamer included not what was its own to use, but what was implied to be Double's invention. Appellant endeavored to convince the Court that Wilson's invention was theirs. The Court was not so deceived.

The original Double underreamer, as described by the patent in suit, is not to be found in use anywhere today, and for the reason that it was promptly displaced by the Wilson underreamer and its imitations which were made by the Appellee. The Appellee's later catalogues, as in evidence in case No. 2918, does not even show it. On the other hand, no underreamer has been satisfactorily introduced on the market since the invention of the Wilson underreamer if we except these imitations which have been made by the Appellee Company. It can be said of the Double underreamer, as described in patent No. 734,833, that "It emerged from oblivion solely to meet the exigencies of this litigation." If it were a practical device, why does not the defendant use it and so escape the charge of infringement? *"Is not the presumption almost conclusive that it*

*was not used because it was not usable?"* (Quotations from *Cimiotti Unhairing Co. vs. American Unhairing Mach. Co.*, 115 Fed. 500.)

The case just cited is particularly forceful when applied to the situation under discussion. We are asked to believe that the Double Patent in suit covers a device which was a pioneer in the art. That it was the last step in perfecting a machine upon which the development of the oil fields of the world had long waited. Yet its manufacture was discontinued with the advent of the Wilson underreamer and its manufacturers immediately began the manufacture of underreamers of types each of which follows more closely the teachings of the Wilson patent. Wilson finally obtains a judgment decree finding infringement, against each and all of these imitations of his device, and the Appellee furnishes a large bond, \$25,000, to enable it to continue its manufacture pending an appeal from the decision of the lower Court. Why furnish this bond to manufacture these infringing types when he is perfectly free to manufacture the Double type, Patent No. 734,833, which we are told is the last step in perfecting underreamers? Why was this type discontinued in the first place?

"The inquiry is pertinent, why was it that this machine was permitted to remain unused?

"Since the success of the Sutton apparatus every effort has been made by infringers to evade it by introducing specious changes of form and yet, if we are to accept the contention

of appellant, there is an operative machine in existence doing the work as well as the Sutton machine and free to anyone who desires to use it. Even within the last few years, when infringers have been in desperate straits and have resorted to every conceivable device, it seems to have occurred to no one that the Lake machine might furnish the necessary means of escape. *Is not the presumption almost conclusive that it was not used because it was not usable?"*

*Cimiotti Unhairing Co. vs. American Unhairing Machine Co.*, 115 Fed. 500.

The reason is apparent. The Double device in suit was only a step in an art which was completed by the last step taken by Wilson. The evidence shows that the underreaming field is practically monopolized by the Wilson underreamer, and its infringements by the Appellee, and this evidence also shows that shortly after the introduction of the Wilson patent the Appellant found it necessary to erect a manufacturing plant to meet the demand for Wilson underreamers, and this plant was soon running day and night shifts to keep pace with this demand.

“Apart from the presumption of novelty that always attends the grant of a patent, the law is that when it is shown that a patented device has gone into general use and has superseded prior devices having the same purpose, it is sufficient evidence of invention in a doubtful case.” *The Barbed Wire Patent*, 143 U. S. 275, 292, 12 Sup. Ct. 443, 36 L. Ed. 154. *Keystone Manufacturing Co. vs. Adams*, 151 U. S. 139, 143, 14 Sup. Ct. 295, 38 L. Ed. 103. *Irvine vs.*



*Hasselman*, 97 Fed. 964, 38 C. C. A. 587. *Wilkins Shoe Button Co. vs. Webb* (C. C.), 89 Fed. 982. *National Hollow B. B. Co. vs. Interchangeable B. B. Co.*, 106 Fed. 697, 909, 45 C. C. A. 544.

“‘In the law of patents it is the last step that wins’, says the Supreme Court. This is the step which Gorton took.” *George Trost Co. vs. Cohn*, 112 Fed. 1009, affirmed (C. C. A. 119 Fed. 505.

It is true that with some devices their general use is not conclusive of invention. Skillful salesmanship or superior advertising ability or facilities might introduce an article that is inferior to a similar device on the market. With underreamers, however, the argument of their general use must be convincing because they are used only by the men who are skilled in drilling operations and who understand the devices of their trade. The success of the Wilson underreamer was due to its intrinsic merit as an invention.

“It cannot be disputed that complainant’s device went into general use, has been very extensively availed of by surface railways operated by electricity and has practically supplanted all others. The respondent suggests that this is largely, if not entirely, due to artful advertising on the part of the complainant, indeed so artful as to be to some extent fraudulent. A suggestion of this character would have great force with reference to an article sold to the public at large, but is of little value in the present case, where the device is used by mechanics of skill in their art.” *Consolidated Car Co., vs. American Heating Co.*, 82 Fed., 996. See also *Loom Co. vs. Higgins*, 105 U. S.

The testimony in this case shows that when the Appellant, Wilson, produced his underreamer he was a poor boy, and at this time the Double underreamer was being manufactured by a strong Company with efficient and far-reaching selling agencies and backed by its parent company, the Union Oil Company with its powerful influence in the oil fields. Notwithstanding this handicap, however, the Wilson device promptly drove the original Double underreamer out of the market. In the face of such evidence it is difficult to understand the contention of opposing counsel that this *discarded* Double underreamer was *the last step in the art* and that the Wilson underreamer is merely an improvement upon it.

Besides infringing the Wilson patent the Appellee Company sought other methods of driving Wilson out of competition in the manufacture of underreamers. The Appellee instituted this suit in 1908 but failed to proceed with same notwithstanding the attempts of Wilson to have the case proceed to a hearing. The case was dismissed in 1910 for want of prosecution. It was re-filed and lay dormant for years before the Appellee (complainants) began to take testimony. Eventually and after much effort on the part of the Appellant (defendant) it was heard by a lower Court in 1916. As has been said, the Appellant secured a decision against Appellee in which its several imitations of the Wilson underreamer were held to be infringements. This was in Equity suits No. A4—B62 consolidated and tried

with this case, and now on appeal here as Case No. 2918.

Also in the appeal decided on November 8, 1915, *Wilson et al vs. Double et al*, 227 Fed., 607, *supra*, we find this same Double loses the suit which is brought by himself and one Bole against the present Appellant and its president, Wilson, for infringement of an underreamer patent made up of the Wilson underreamer combination of elements in which was included a key which Wilson had designed, manufactured and applied for patent upon. Bole who was employed by Wilson, applied for patent on the key almost coincidently with Wilson, was granted the patent and assigned a part interest to Double, and with him instituted suit for infringement against Wilson, the patent office inadvertently issuing the patent to Bole and Double. In the citation given, Wilson was found to be the true and original inventor, and the patent office had twice previously decided the case in favor of Wilson. It is instructive to note that the principal piece of evidence submitted by the complainants in that case was an alleged sketch of the device in suit. This court characterized this sketch as *a peculiar and suspicious piece of evidence*, and stated "*We are far from convinced that the sketch is genuine, or what it purports to be.*" (*Wilson et al vs. Double et al*, 227 Fed. 607, *supra*.)

The history of this case shows a long-continued effort on the part of the Appellee to harass the

Appellant with litigation which, at least in the case of *Double et al vs. Wilson et al*, above cited, was so lacking frankness and fair play, as to call forth the scathing comment of this Court. For years the Appellee has prevented the Wilson patent from being salable by submerging it in litigation which said Appellee was unwilling to have proceed to a hearing, and has placed the Wilson reamer business under a cloud.

The evidence submitted in this case by the Appellee and the brief of opposing counsel before the lower Court betray an unwillingness to state clearly the exact nature of the Double invention, as covered by the claims of the Double patent, and to base their case upon a precise definition of that invention. *We have shown that the Appellee, in his argument before the lower Court, created from his imagination a combination which he represented to be the Double invention but which is not described by any of the claims of the Double patent in suit.* Also we have shown that the decision of the lower Court was based upon this hypothetical combination which the Court virtually admitted was not covered by claims 2, 6, 7 and 8 of the Double patent but which he, nevertheless, held were infringed by the Wilson underreamer, and which we have seen was not covered by claim 1.

In order to arrive at an exact understanding of the Double underreamer invention we will now analyze the claims of the Double patent in suit. It

has already been stated that the Appellee admits that claims 3, 4 and 5 of the Double patent are not infringed by the Wilson underreamer, so it will not be necessary to consider them in this analysis. The remaining claims are as follows:—

1. An underreamer comprising a hollow mandrel furnished with an internal shoulder, a downward extension having opposite parallel bearing-faces having a key-way therein, shoulders at the sides of such extension, and upwardly and inwardly sloping dovetail slipways beneath said shoulders; a spring on the shoulder in the hollow mandrel; a rod playing in the mandrel furnished with a key-seat and supported by the spring; dovetail tilt-slips playing in the slipways and furnished with key-seats respectively; a key in the key-seats of the slips and rod and playing in the keyway of said extension to hold the slips against the shoulders; said slips being furnished with inward projections to slide upon the downward extension of the mandrel to spread apart the cutting edges of the slips when the slips are drawn up.

2. An underreamer furnished with a mandrel having a downward extension provided with opposite parallel bearing-faces and a key-way in the extension; a spring-supported rod furnished with a key-seat and playing up and down in the mandrel; tilt-slips slidingly connected with the mandrel and furnished with inward projections to slide upon the opposite bearing-faces of the downward extension to spread the slips apart at the lower ends when the slips are drawn up; and a key carried by the rod and carrying the slips.

6. In an underreamer, a mandrel furnished with a hollow slotted extension, the lower end of which slopes upward at the edges; tilt-slips slid-



ingly connected with the mandrel and furnished on their inner faces with projections, the upper faces of which slope downward to slide upon the extension of the mandrel; and means connecting the slips with the rod.

7. In an underreamer, the combination with a hollow mandrel, provided with a slotted extension, a spring-actuated slip-operating rod provided with a pivot-key, tilt-slips provided with key-seats adapted to be engaged by said pivot-key, said key-seats being somewhat larger than the key to allow the slips to tilt, said slips being provided with inwardly-projecting shoulders, and said slotted extension provided with surfaces adapted to tilt said slips and hold the same in expanded position.

8. In an underreamer the combination of a hollow mandrel with a hollow slotted extension, said extension having opposite parallel bearing-faces, a slip-carrying rod in said mandrel, slips connected to said rod, said slips having projections which bear against said extension, said slips being provided with key-seats, a key carried by said rod, each end of the key lying in a key-seat of a slip, and the key-seat in each slip being somewhat larger than the key to allow the slips to partake of a tilting action.

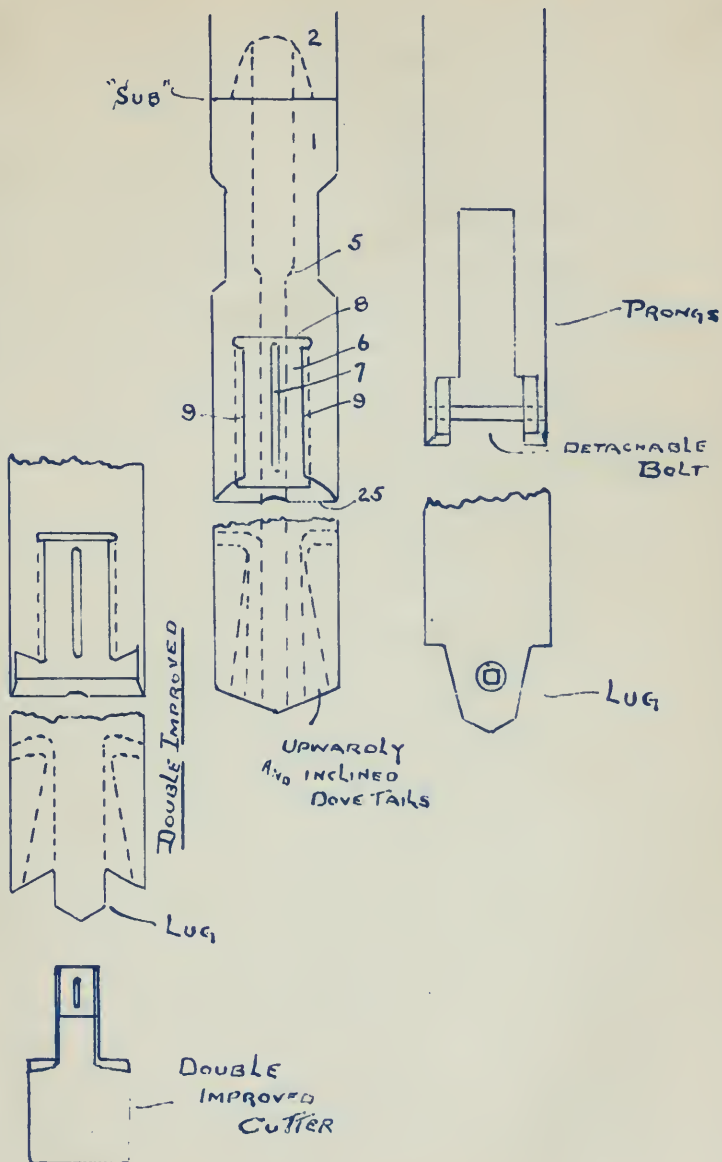
The first part of the Double underreamer to be considered is the hollow mandrel, or body, which is a part of all the underreamers which have been devised. In order to differentiate his mandrel from other hollow mandrels Double details and describes its features which he claims as elements in his combination. It was impossible for Double to obtain a patent upon a hollow underreamer mandrel without defining such elements of its construction as would

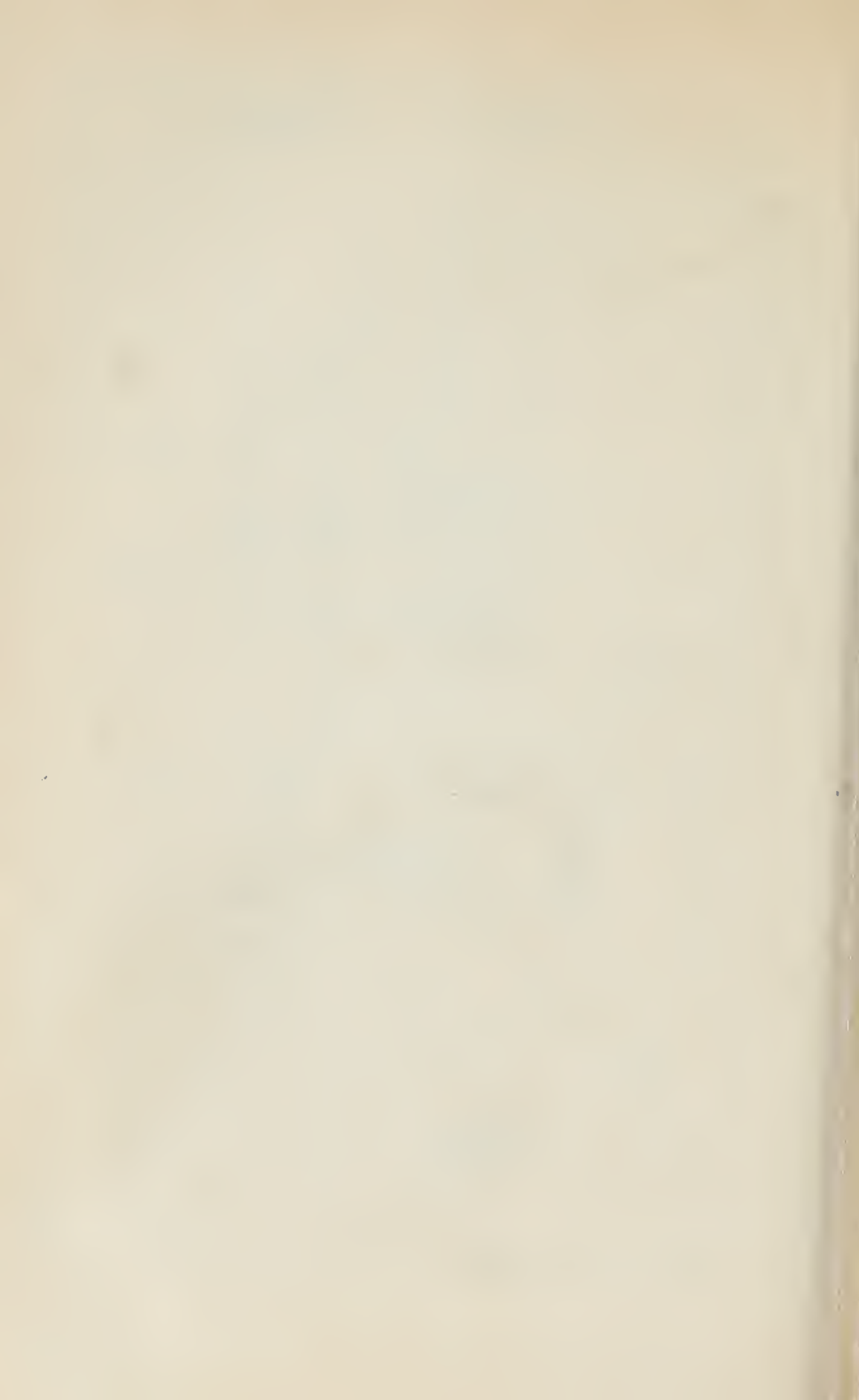
differentiate it from the hollow mandrels to be seen in other underreamers. The description of the features contained in the Double mandrel greatly narrows the Double invention and *we do not hesitate to say that the Commissioner of Patents would never have allowed a patent to issue upon the loose and highly comprehensive description of the Double hollow mandrel which the lower Court arrived at by its amazing application of the doctrine of equivalents.*

The features or elements limiting and defining the Double mandrel as enumerated in the claims of the Double patent in suit are as follows:—I. the mandrel 1 is *hollow* or has a longitudinal hole for the reception of the spring and rod. II. This hole has an internal shoulder (5) upon which the spring is seated. III. The lower end of the mandrel has a *downward extension* (6), the form of which is narrowly limited in the claims to a *downward extension* which is, IV, hollow or drilled longitudinally for the reception of the spring-actuated rod (11); V. It is slotted (7) for the reception of the key (17) upon which the slips (15) are hung, and, VI, It has opposite parallel bearing faces upon which the inward projections (18) of the slips rest when in reaming position. Also, VII, The bottom edge of this downward extension has rounded or upturned faces (25). VIII. There are shoulders at the side of the downward extension (8); IX. Dovetails (9) sloping upwardly and inwardly beneath said shoulders; and, X, a “sub” or joint member (2) which subdivides the mandrel and confines the rod and its spring.

# DOUBLE REAMER

# WILSON REAMER





The Wilson underreamer also has a mandrel which is hollow (1) or has a longitudinally-drilled hole for the reception of the spring-actuated rod (5), but it does not have the internal shoulder (11), upon which the spring seats. In the Wilson device the spring seats upon a removable key or a block (7), which was the subject of the suit above referred to, *Wilson et al vs. Double et al*, 227 Fed. 607, *supra*, in which Wilson and not Bole was adjudged to be the inventor of this key combination. The seating of the spring upon this removable key or block instead of upon a fixed shoulder in the mandrel is original with the Wilson underreamer. The key (17) in the Double device is for another purpose altogether, viz., connecting the slips with the spring-actuated rod, and resembles the Wilson key only in name. The Appellee's witness, Griffin, tries to confuse the Court as to the function of this key in the Wilson device which forms the spring seat in the mandrel and is removable so as to permit the underreamer to be assembled without the use of the "sub" joint which is a highly detrimental feature of the Double mandrel. The inter-relation between this key or block and the form of the bottom of the mandrel in the Wilson underreamer, which permits the whole device to be assembled from the bottom, was epoch-making in the design of underreamers as it eliminated the use of the "sub" (Xa) or extra joint in the body of the underreamer which frequently caused the Double underreamer to be lost in the drill hole, and ruined the hole or caused great expense in drilling or otherwise removing the ob-



struction. See testimony, Wrenn (R. 248-249), as follows:

“My next experience was at Coalinga in 1907. I bought and ran three Wilson,—10 inch, two eight and a quarters, and six and five-eighths, using them continually from that time on. During that period I also used one Double of the older pattern, 12½ inch. I now have four or five Double reamers. ‘Complainants’ Exhibit Double Reamer’ is the general type, of course they have made slight differences in them, and improvements, of course. This exhibit represents the general plan of both the first and second kinds of Double reamers. I don’t know that I could specify the change made in the Double reamer unless I had the first Double reamer before me. The new reamer has more stock in it—much heavier,—a very great improvement over the old. I was rather unfortunate in the use of the first Double reamer and became considerably prejudiced against the reamer, in that the joint of the 12½ that I was using, the pin, broke off, leaving the whole bottom part of it in the hole, causing me to have to move the derrick and drill a new hole. That was in 1907 or 1908. The pin broke off square and we could not fish it out. We had to move the rig and redrill the hole. I should judge the abandoned hole had cost me to that date between fifteen hundred and two thousand dollars. The underreamer itself I had to pay for, which was, I think, three hundred and some dollars. It was rented.”

See also testimony of Kebele (R. 208):

“I have known of Double underreamers giving trouble at the middle joint. Same occurred on the Peerless Oil Company’s property in the Kern River Field. The reamer came unscrewed at that joint. They fished the broken part out.”

The form of the bottom of the Wilson mandrel is so different from that of the Double device that they can scarcely be compared. The bottom of the Wilson mandrel has two prongs (2) terminating in lugs (2') which spread the cutters apart into reaming position and hold them so spread. Above the lugs and inside of the prongs are parallel shoulders (2''), *not dovetails*, which form ways (3) for the shoulders (4<sup>2</sup>) on the cutter *shanks* (4'). The lower ends of the lugs have beveled faces (9) for spreading the cutters apart to reaming position. The prongs generally are, although not necessarily, strengthened by means of a detachable cross piece (11) and which also, when detached permits assembling of the reamer parts at the bottom.

A careful comparison of these features of the Wilson and Double mandrels will convince any mechanical mind that they are designed to operate upon entirely different principles. Their *modes of operation* are entirely different. The Wilson mandrel does not have, II, the internal shoulder; III, the downward extension, with its, IV, hollow; V, its slot; VI, its opposite parallel bearing faces; VII, its rounded or beveled lower edge; VIII, its shoulders at the side of the downward extension; nor, IX, the dovetails sloping upwardly and inwardly beneath the shoulders, nor Xa, the "sub" or joint. The Wilson mandrel has the hollow or longitudinally-drilled hole for the reception of the spring and rod, just like any other reamer, and the shoulders inside of the prongs for the reception of the cutter shanks, which shoulders being parallel do not permit any

sliding action of the shanks of the cutters upon the suspension means to permit tilting. So, the Wilson cutters could not "tilt" even if the principle of expansion required or permitted, which it does not. (See testimony of Wilson, R. pp. 195, 196.)

By no stretch of the imagination, however, can the Wilson mandrel be said to contain the other enumerated features of the Double mandrel and for the reason that their mode of operation, as well as their construction, is entirely different.

Now the slot (7) of the Double patent performs a very vital function in the action of the reamer. In addition to being a key guide or key-way, its lower wall serves as a stop for the key or the downward travel of the rod, key and cutters. Were it not for this stop over-travel of these parts would occur, and the cutters be liberated from their ways and the cutter-key and be lost in the hole. Obviously no such part with any such function is to be found in the open space between the Wilson body prongs. With the Wilson patented form of reamer a device not shown in the patent was used, namely, a pipe surrounding the rod and within the spring and resting upon the detachable block (7) and engaging the spring-confining nut on the rod to limit the downward play of the rod. (See Defendant's Exhibit Wilson Reamer No. 1, and testimony Wilson R. 190). In the key type of Wilson reamer (Wilson Reamer No. 2), the removable key in the body serves the double function of supporting the spring at its lower end and acting as a stop to arrest downward

travel of the rod by engaging with the upper wall of the elongated slot in the rod.

Manifestly entirely different means from the cutter carrying key and extension slot (7) of the Double reamer are employed in the Wilson reamer for performing this rod-checking function. This marked differentiation alone completely refutes the opinion of the lower Court that the Wilson pronged type of underreamer body is the equivalent of the narrowly claimed hollow slotted extension type of Double underreamer body. The "slot" feature of the Double "extension" with its two functions is absolutely missing in the Wilson reamer.

The opposing counsel argues that any kind of a projection on the bottom of an underreamer mandrel, or a group of such projections, is a "downward extension" within the meaning of the detailed description of the "downward extension" in the Double patent. If the Double underreamer patent should cover all forms of underreamer construction having projections at the bottom of the mandrel is it not strange that the claims of that patent should not have been worded so as to cover all such forms of construction and particularly if we are to believe that such a claim in the Double patent would have been allowed by the Commissioner of Patents over the Swan and other "downward extensions"? Also the Appellee argues that the space between the prongs or forks of the Wilson underreamer mandrel *is a hollow and a slot merged together*. This Court will doubtless not wish its time taken up with the

discussion of such absurdities as result from fallacious and cunning attempts to broaden the meaning of narrowly worded claims, by the use of words only. In *Westinghouse vs. Boyden Power Brake Co.*, 170 U. S. 568, it is said:

“But even if it be conceded that the Boyden device corresponds *with the letter of the Westinghouse claims*, that does not settle conclusively the question of infringement. We have repeatedly held that a charge of infringement is sometimes made out, though the letter of the claims be avoided. *Machine Co. vs. Murphy*, 97 U. S. 120; *Ives vs. Hamilton*, 92 U. S. 426, 431; *Morey vs. Lockwood*, 8 Wall, 230; *Elizabeth vs. Pavement Co.*, 97 U. S. 126, 137; *Sessions vs. Romadka*, 145 U. S. 29; *Hoyt vs. Horne*, 145 U. S. 302. *The converse is equally true.* The patentee may bring the defendant within the letter of his claims, but if the latter has *so changed the principle of the device* that the claims of the patent, literally construed, have ceased to represent his actual invention, he is as little subject to be adjudged an infringer as one who has violated the letter of a statute has to be convicted, when he has done nothing in conflict with its spirit and intent. ‘An infringement,’ says Mr. Justice Grier in *Burr vs. Duryee*, 1 Wall., 531, 572, *‘involves substantial identity*, whether that identity be described by the terms “same principle,” same “modus operandi,” or any other \* \* \*. The argument used to show infringement assumes that every combination of devices in a machine which is used to produce the same effect, is necessarily an equivalent for any other combination used for the same purpose \* \* \*. This is a flagrant abuse of the term “equivalent.” ’ ’ ’



Appellee would have it that Appellant infringes because Appellant expands and contracts his cutters. This *result* was not claimable by Double, and mere results are not patentable.

The next part of the Double device to be considered will be the slips or cutters. These are "tilt slips," slidingly connected with the mandrel (1), and with X, dovetails (29) playing in slipways (9) on the mandrel (1); XI, with keyseats larger than the key (17); XII, with inward projections (18) which slide upon the downward extension (6) of the mandrel; XIII, and with the upper faces of these inward projections sloping downward as at 26.

The Wilson cutters do not use the elements numbered XII and XIII, and for the reason that the Wilson mandrel does not have a "hollow, slotted downward extension" *against which the cutters must rest at all times, collapsed or expanded, as is the case with the Double device.* The Double cutter does not contain *shanks*, while the Wilson cutter is made up of a *cutter head* (4) and a *long shank* (4'), and the originality and novelty of this construction is attested by the fact that Wilson was granted basic claims upon it. (See claims 16 and 17 in the Wilson patent.)

This design of cutter co-operating with the special design of the Wilson mandrel permits the cutter heads to bear solidly against the prongs when in reaming position but, when collapsed, the cutter head is below the prongs and the shanks are in be-

tween the prongs. This novel interrelationship between the Wilson pronged mandrel and the Wilson cutter with its shank and head and bearings (4<sup>3</sup>) on the laterally projecting shoulders of this head make possible the mode of operation *which is essential to a completely successful underreamer* and which the most expert mechanics and inventors in the art had striven vainly to obtain, viz.—*that the portion of the mandrel which serves to spread the cutters and hold them apart in reaming position SHALL NOT BE BETWEEN THE CUTTERS WHEN SAID CUTTERS ARE IN COLLAPSED POSITION. It is elemental, that, with this construction, the cutters can be given unheard-of strength for the reason that no material has to be removed from them to make room for the spreading device when the cutters are collapsed.*

We submit that the Wilson underreamer is the first underreamer ever designed which successfully met this requirement. An examination of all previous underreamers including the Double will show that, if a continuous extension or portion of the mandrel was used to spread the cutters when in reaming position, that continuous extension or portion of the mandrel **REMAINS BETWEEN THE CUTTERS WHEN THEY ARE COLLAPSED**. Inventors had sought to solve this problem by using some form of a movable spreader and bearing, as in the Kellerman patent, and also had sought to dispense altogether with a spreader and bearing as in the North patent in which the cutters would rock on each other inside a bowl. These de-

signs, however, were all unsatisfactory as it was found that the requisite strength could be obtained only *by having the spreading bearing a fixedly connected portion of the mandrel.*

The remaining parts of the Double underreamer to be considered are the rod with its spring and key. This rod (11), XIV, plays in the mandrel; XV, is supported by a spring (10); XVI, contains a key-seat (12) in which is, XVII, a key (17); XVIII, which plays in the slot or keyway in the downward extension (6), and, this key has, XIX, a notch (22) to permit the rod to engage it and thus prevent its displacement during operation.

The Wilson underreamer has a rod or stem (5'), with a "cross" or "tee" (5) which, as a single member of great strength, plays in the mandrel, is supported by the spring (6), XV, and draws the cutters upward into reaming position. This "cross" or "tee," however, does not contain a key-seat, XVI, nor a key, XVII, playing in the slot or keyway of the downward extension of the mandrel, XVIII; and of course, having no key, the notch in said key, XIX, is not found in the Wilson device. To be sure there is a slot cut in the rod or stem of the Wilson Reamer No. 2, to allow room for the vertical play of the rod or stem (5'), but the "seats" for this key are in the mandrel and not in the "rod" or stem, nor in the slips; and this key is a part of the mandrel and does not belong to the rod nor stem. The function of this key has been fully explained in connection with the above description of

the Wilson mandrel, and it will be noted that it performs an entirely different function from the key in the Double underreamer.

On the following page will be found a table showing the elements of the Double underreamer grouped together to represent the several claims of the Double patent. A separate column in this table shows the elements of these combinations which are to be found in the Wilson combination. It has not been considered necessary to include in this comparison claims 3, 4 and 5 of the Double patent for the reason that it is conceded by the Appellee that they are not infringed by the Wilson device, but they would only show a still greater difference between the Double and Wilson underreamers.

	Double Claims					Wilson Device
	1	2	6	7	8	
<b>Mandrel</b>						
I. Hollow .....	I			I	I	I
II. Internal Shoulder .....	II					
III. Downward Extension..	III	III	III	III	III	
IV. Hollow .....			IV		IV	
V. Slotted .....	V	V	V	V	V	
VI. Opposite parallel faces	VI	VI			VI	
VII. Bottom edge upturned			VII	VII		
VIII. Shoulders at sides of downward extension..	VIII					
IX. Dovetails sloping up- wardly and inwardly	IX					
<b>Slips.</b>						
X. With dovetails playing in slipways .....	X					
XI. With keyseats larger than key .....	XI			XI	XI	XI
XII. With inward projec- tions .....	XII	XII	XII	XII	XII	
XIII. With upper faces slop- ing downward .....			XIII			
<b>Rod.</b>						
XIV. Plays in mandrel.....	XIV	XIV			XIV	XIV
XV. Supported by spring....	XV	XV		XV		XV
XVI. Contains keyseat .....	XVI	XVI			XVI	
XVII. Contains a key.....	XVII	XVII		XVII		
XVIII. Key plays in slot of downward extension..	XVIII					
XIX. Key has notch to en- gage rod (Claims 3 and 4 only) .....						



The table plainly shows what elements the patentee of the Double device considered to be essential to his combination viz.—III, The downward extension (6); V, The slot in the downward extension (7); XII, The inward projections on the slips (18). These are included in every claim under consideration and plainly were considered to be the essential features of, and intended to be fully covered by, the patent. Not one of these elements of the Double patent is found in the Wilson reamers. We repeat that in common with a number of other elements of the Double combination, these features are not to be found in the Wilson underreamer nor anything that can be considered their equivalents. In fact, by the broadest application of the doctrine of equivalents, it will be seen that the Wilson underreamer uses only five of the nineteen elements which make up the several claims of the Double combination. We submit that it is incontrovertible that there are a number of elements positively included in detail in each of the claims of the Double patent which are not to be found in the Wilson underreamer, either those elements or their equivalents. Also even if it were permissible, as claimed by the lower Court, to group all of these claims together so as to cover a combination containing every one of the nineteen elements of the Double machine itself, even this hypothetical combination would not be infringed by the Wilson underreamer, which will be found to contain only five of those elements.

The fact that the Wilson underreamer does not contain a number of the elements essential to the

Double device and does contain several new and novel elements not contained in the Double underreamer makes of the Wilson underreamer a new combination, a new unitary structure, made up of a number of elements arranged together in a novel manner to perform a new and useful result, in fact, a completely novel underreamer organization. It is logical that a device cannot be held to infringe another combination unless all the elements of that combination are present in the alleged infringing device. If one or more elements of the combination are absent from a device certainly it cannot be contended that the combination is present in the device.

“We know of no authority where a defendant has been held as an infringer of a combination claim where he omits three of the elements of the combination. If the defendant omits one or more elements which make up the combination he no longer uses the combination. It is no answer to assert that the omitted elements are not essential and that the combination operates as well without as with them.” *Evans et al vs. Hall Printing Press Co.*, 223 Fed. 539.

The trial Court has observed that the Wilson reamer might be stripped of the Wilson novel features and be made over backwards into a Double reamer, thus reversing the rule of infringement. It is easy to trace back from success to failure, but it remained for Wilson to blaze the way ahead from failure to success.

Not only are the combinations of elements entirely different in the Wilson and the Double underreamers but their modes of operation have scarcely

any resemblance. It has already been pointed out that, in the Wilson underreamer, the cooperative interrelation between the pronged form of the bottom of the mandrel and the cutters with heads and shanks, permits of a mode of operation of the underreamer which had never been attained before and which the most expert mechanics and inventors in the art had striven vainly to obtain, viz., *that the portion of the mandrel which serves to spread the cutters when in reaming position SHALL NOT BE BETWEEN THE CUTTERS WHEN SAID CUTTERS ARE IN COLLAPSED POSITION.* An examination of all previous underreamers will show that, where the spreading member is a fixed part of the mandrel, *this spreading member remains between the cutters when they are in collapsed position.* In the Double underreamer the spreading member is the web-like downward extension of the mandrel and it remains between the cutters at all times whether they are expanded or collapsed. In the Wilson underreamer the lower end of the mandrel terminates in two prongs or forks and the cutters, when expanded, bear against these forks; when collapsed, the heads of the cutters are below the ends of the prongs or forks and the cutter *shanks* collapse *between* these prongs or forks. The 'tilting' or 'teetering' action of the cutters of the Double device is due to the presence of the spreading member, or downward extension, between the cutters at the time of collapse. Such action is impossible in the Wilson underreamer

as there is no part of the mandrel between the cutters at the time of collapse upon which to 'tilt' or 'teeter.'

If the Wilson underreamer contained *all* of the elements of the Double underreamer but the *co-operative interrelation* of those elements had been changed so as to entirely change the *mode of operation* of the device, then the identity between the underreamers would no longer exist and this change of the mode of operation would negative infringement. This Court, speaking through your Honor Judge Gilbert, has so held in *Western Engineering & Construction Co. vs. Ridsen Iron & Locomotive Works*, 174 Fed. 224. In that case, notwithstanding the defendant's gold dredger contained *all* the elements of the claim charged to be infringed, there was no infringement because defendant had, in its dredger, changed the *co-operative interrelation* of such elements, thus changing the mode of operation of the device. There being no identity between the respective modes of operation, there was no identity between the two devices.

"If the device of the respondents shows a substantially different mode of operation, even though the result of the operation of the machine remains the same, infringement is avoided." *Cimiotti Unhairing Co. vs. American Fur Refining Co.*, 198 U. S. 414.

The following rule is also laid down in the same case:

"If, however, such changes of size, form or

location effect a change in the principle or mode of operation, such as breaks up the relation and co-operation of the parts, this results in such a change in the means as displaces the conception of the inventor and takes the new structure outside the patent."

"Identity in the idea of means subsists where the compared inventions perform the same functions *by the same modes of operation*. If the effects produced are substantially different, there is no identity. If the effects are the same and the functions are essentially different, there is no identity. *If the functions are the same and the modes of operation by which they are performed are radically unlike, there is no identity.*"—Robinson on Patents, Section 894.

"To make one mechanical device the equivalent of another, it must appear not only that it produces the same effect, but that such effect is produced by substantially the same mode of operation." 5 Bann. & A., 4. Walker on Patents, Section 353.

And this Double means of expansion and collapse necessitated the fatally weak cutter with its V-shaped notch to ride over the extension *always between the cutters*.

We will now describe the defects of the Double underreamer due to its construction and mode of operation and show how these were overcome in the Wilson underreamer because of its entirely unique construction and mode of operation. Such a comparison will emphasize their dissimilarities.

The Double underreamer had the defect that was common to all former underreamers,—*it was weak*



and frequently broke down because of the severe strain under which this class of tool must operate. Such breakages cannot be remedied by merely repairing the tool or replacing it by another for, when broken, the cutters of the underreamer are sometimes left in the hole and much time is wasted in the attempt to "fish" or remove them from the hole, or force them to one side or drill them up so as to permit the drilling to proceed. Many times holes are lost altogether if the broken portions of the underreamer cannot be removed or forced aside or drilled up. The first requisite in an underreamer is that it must not break and lose some of its parts in the drillhole. All underreamers previous to the advent of the Wilson device had this serious defect,—their construction was necessarily weak. (See testimony of Clay, Kinsey, Wrenn, Kibell, Bennett, Youngken, Griffin and nearly every driller. The record is full of it. All broken Double reamer parts in evidence. Not one such identified broken Wilson part is in evidence.)

In the Double underreamer, the slips have a narrow cutting edge and a narrow bearing upon the mandrel where the inward projections seat upon the opposite parallel bearing faces of the downward extension. This results in a tendency of the slips to vibrate sideways throwing a torsional strain upon the dovetails of the slips and the dovetail ways in the mandrel, which frequently tears out the dovetails and ways and permits the slips to become separated from the mandrel causing the serious troubles above



referred to. As these dovetail ways in the mandrel are downwardly and outwardly inclined, *they are weakest at the bottom where the torsional strain is heaviest and here they usually break out.*

The slips are held in the slipways by means of the key which is held in the spring-actuated rod only by the recess in the key and the tension of the spring. Sometimes this key breaks or becomes unseated and, in either event, the loss of the cutters in the hole is inevitable.

The downward motion of the slips and the spring-actuated rod is limited by the lower end of *the slot in the downward extension in which the key plays.* The pounding of the key on the bottom of this slot usually elongates the slot until it breaks through the bottom of the downward extension with the resulting loss of the cutters in the drill-hole. This can be avoided in the Double device only by discarding it before the wearing of the slot becomes serious.

The slips and the downward extension rapidly wear out where the inward projections of the slips bear upon the opposite parallel faces of the downward extension. When this wear becomes serious the underreamer has to be discarded. Attempts have been made to repair a mandrel, worn in this manner, by building up the worn faces with steel plates or "shims." The success of these attempts, however, has not been encouraging, as drillers generally refuse to use a defective underreamer, as do the owners.

The design of the Double underreamer necessitates its being constructed with a "sub" or extra joint in the mandrel which can be unscrewed to permit of assembling and taking down the mechanism. This joint or "sub" is a weakness, in view of the fact that it sometimes unscrews while in operation causing the loss of the whole lower portion of the machine in the hole, with the results above pointed out.

The underreaming results of the machine are frequently unsatisfactory in that the narrow cutting edges of the slips permit the hole to become grooved, "rifled" or "keyseated," as it is termed by the drillers, leaving the hole unreamed so the casing cannot be forced down behind the underreamer. Also these narrow cutting edges rapidly become dull and worn thus requiring their frequent removal for sharpening.

In operation, the downward blow of any underreamer frequently causes the cutters to jam or wedge tightly in the hole. When pulled out by the return stroke of the walking-beam, the Double device, like many of its predecessors, *releases or collapses so suddenly* that the tool bounds upward, and this "bounding" or plunging motion, not being coincident with the motion of the drill string, counteracts the effectiveness of the drilling operation. The cutters are often broken at such times. The sudden release of the underreamer above referred to is due to the travel of the inward projection of the cutters on the parallel bearing faces of the downward ex-

tension, and when the bottom of this extension is reached the collapse is instantaneous and complete and at a time when the drill string is traveling most rapidly and under a very heavy tension.

The evidence in this case also shows that the Double underreamer does not collapse or close to the degree necessary to facilitate passing it down through the casing freely, nor is the expansion sufficient. This is fatal in an underreamer. (See testimony of Kinsey, Gray, Kibele.)

Right at this point, midway between consideration of the defects and inefficient features of the Double patented reamer and the novel and highly superior features of the Wilson reamer which fundamentally corrected the errors in the Double invention and in other underreamers we wish to point out certain further specific distinctions to be made between the Wilson and Double reamers, in order to anticipate the confusion which we are convinced will be created by counsel for appellee, judging by his past performances in this suit.

In the first place, appellant's counsel will attempt to convince your Honors that much that we have said about the trivial step in the art taken by Double is to be ignored because for some inscrutable reasons Double made a wonderful invention when his patent gives conclusive evidence to the contrary. But, fortunately, we have it from the lips of Double himself that his purported invention cannot be construed and accepted as anything more than one most specific

device in which, to take Double's own words, there must be present the hollow slotted extension 6 integral with the rest of the body 1, as one piece. See his testimony R. p.—as follows:

“The Under-reamer exhibit in June 1901 was my first invention. The reason I did not apply for patent on reamer No. 796,197 until I had applied for patent on No. 734,833 reamer was I had supposed after filing my first application that I had covered all the points in both applications, but Mr. Lyon suggested filing additional application to cover the removable end block features which were not covered in the first application. In other words, the claim in application in No. 734,833 did not cover all the parts of the first reamer I manufactured. Patent No. 734,833 would not cover some of the features of the first form. It would not cover the removable end block.

XQ. 247. By MR. BLAKESLEE: Well, please state a little more definitely, how you understood the removable hollow slotted extension would not be covered in the application or in the patent to issue on the application made, as filed?

A. Mr. Lyon had explained to me that was a different application, a different way of putting the block in, and suggested making the application, which I did.

XQ. 248. In other words, you understood that one patent was to be for the solidly attached hollow slotted extension, and the other was to be for the removable hollow slotted extension; is that correct?

A. Yes.”

If now, the Double invention, as Double says is true, is only for the integral hollow slotted extension

6, or is necessarily limited to that feature, how can the Wilson underreamer which has no hollow slotted extension, either fixed or detachable, be an infringement of the Double patent?

The witness Griffin, who insisted that the Wilson reamer has both a hollow and a slot in its body extension, was asked to make a sketch showing the same, one in red ink and one in black ink. Counsel for appellee rushed to his assistance and refused to permit the witness to tell the truth about this on paper, by a mixture of red and black inks which would be the only way in which the single open space between the prongs of the Wilson reamer could be illustrated responsive to our request.

The trial court found that Wilson had merely subdivided the extension 6 of the Double patent into two parts, namely, the prongs. While it is undoubtedly the law, that making over a device originally having a single construction into a two part construction, and vice versa, *where no additional function, advantage or feature is obtained or produced*, does not in many cases involve invention, such law does not apply where, as in the case of the Wilson invention, such change results in total reorganization as it does in the Wilson reamer, for the many reasons herein pointed out.

A further point to be made as to the radical departure in the Wilson reamer from and over the Double reamer, in addition to what has been said with regard to the novel provision of a shank with shoulders for the cutter, and lateral shoulders on the



body of the cutter with the bearing faces 4<sup>3</sup> is that Wilson for the first time brought these bearing faces to be used with spreading bearings *down onto the body of the cutter*. The inwardly directed shoulders 18 of the Double cutters were very high above the cutting edge, so that an extreme leverage was produced in the cutter, tending to rip out the dovetails 9. Wilson brought them down close to the working end of the cutter, and greatly reduced this destructive leverage action, in addition to extending them laterally instead of inwardly, and causing them to co-operate with lateral spreading bearings 9, so as to prevent the equally dangerous rotatory action, likewise producing a greater cutting edge and providing more stock in the body of the cutter for use in dressing out or sharpening the cutter, and producing a massive cutter body not suggested in the Double reamer, and better able to withstand the abrasive contact with the walls of the hole. Thus we see how thoroughly Wilson re-organized the underreamer cutter, as well as the body and extension of the reamer, the cutter suspending means, and the spring seat, not merely developing the art along the faulty lines pursued by Double, but striking out into new and hitherto unexploited mechanical territory.

In this connection see the logical and incontrovertible testimony of the patentee Wilson at R. pp. 157-159, as follows:

“Another marked difference between the two reamers is the position of these expanding or spreading-bearings for the cutters, in relation to the retaining shoulders on the reamer body, or dovetails, as they are commonly termed. The



Wilson underreamer is so constructed that these spreading-bearings project downward a very considerable distance below these dovetail shoulders. Thus, [140] the cutters are braced, down close toward the lower end, at which point of the cutters the greatest strain is applied, namely, the strain which tends to crush the cutters inwardly as they are being used or as they are reaming in a hole. The hole has a tendency to form into a funnel-shape, thus constantly crushing the cutters toward each other. That is the reason why it is necessary to have the cutters firmly braced apart by means of some form of a spreading-bearing while the cutters and the reamer are in operation. Otherwise this inward thrust or strain on the cutters would have a tendency to keep them almost constantly collapsed so that they would not enlarge the hole to the size required. And, as previously stated, the projecting ends or spreading-bearings on the ends of the prongs of the Wilson underreamer body extend downwardly to a point where this strain above referred to is taken up at the strongest portion of the underreamer cutter and allows the strain to have a very short leverage against the cutter. This leverage, in most instances, with the Wilson underreamer is probably not more than one and one-half to two inches, while the leverage with the Double underreamer applied against the cutter is, in most instances, from four to five and sometimes six inches. Thus, the strain applied to a Double cutter, owing to the increased leverage on same, is probably twice if not three times as great as the same strain would be on the Wilson underreamer cutter. And this is due to the fact that with the Double underreamer this spreading-bearing does not project below the dovetails or retaining shoulders on the reamer body; in other words, the lower end of their spreading-bearing is virtually flush with the lower ends of the re-

taining shoulders or dovetails of the Double body. This feature, alone, is one of the very great advantages we claim for the Wilson underreamer and is one of the reasons why there are so very few Wilson underreamer cutters that are ever bent or broken."

Further, in this connection and discussing the radically novel Wilson cutters, we wish to quote the indisputable testimony of the expert Wilson with regard to the absence of any tilting in the collapsing and expanding action thereof, and the radical difference between the functions and office of the Double dovetail ways 9, and the Wilson parallel ways 3. See R. pp. 262, 263.

"With the Wilson underreamer the dovetails of the body control the pivotal point of the cutters so that the upper end of the cutters at the fulcrum point cannot swing outwardly or inwardly as the cutter collapses or expands. This is due to the fact that the Wilson underreamer cutters travel in parallel dovetails.

"The Wilson underreamer is the only one the dovetails of which are solely for the purpose of holding the cutters in the reamer body. With the Swan and Double underreamers the dovetailed on the reamer body perform a dual function, namely, retaining means and also expansion means."

This one radical structural difference alone is sufficient in and by itself to avoid the charge of infringement in this case, as it necessitates a mode of operation in the Wilson underreamer completely at variance with that of the Double patent, and prevents, in fact, an operation of the Wilson underreamer inclusive of any tilting action of the cutters

whatsoever. At times, alleged infringing devices are *capable* under changed conditions of operating in accordance with the principle of the patent sued under. Then infringement becomes, as in *Wright Co. v. Curtiss*, 204 Fed., a possibility. But where the structural organization rigidly prevents the possibility of any such mode of operation as that of the patented device, infringement is impossible.

To be read in connection with the chart appearing some pages above, and which chart points out that the Wilson reamer under the most liberal admissions can be found to include only five of the nineteen claimed parts and features of the Double patented reamer, we wish to briefly summarize the various features of the mode of operation of the patented Double reamer which the Wilson reamer does not contain or employ, and the operative features used in the Wilson reamer not found in the Double patent.

#### DOUBLE

Tilting cutters, collapsing and expanding over spreading bearings, always between cutters.

Does not use.

Cutters tilted by upwardly and inwardly inclined dovetails.

Does not use.

#### WILSON

Does not use.

Swinging cutters with no spreading - bearing between them when collapsed.

Does not use.

Cutters have initial collapsion and final expansion on inclined spreading and inthrust bearings 9.

## DOUBLE

Does not use.

Expansion produced by inwardly directed shoulders No. 26 on cutters.

Cutter suspending rod and key, rod guided in hollow and key guided in slot 7 in extension 6.

Slot 7 in extension 6 limiting downward travel of cutters and rod.

Expanded cutters separated by continuous extension 6.

Does not use.

Does not use.

"V" shaped groove across backs of cutters to permit collapsion and cause expansion over hollow slotted extension.

## WILSON

Lateral cutter shoulders c o - a c t i n g with spaced spreading and inthrust bearings preventing rotatory action.

Does not use.

Does not use.

Does not use.

Does not use.

Cutters b e t w e e n spaced prongs and supported by removable spring-seat permitting assembling at space between prongs.

Means for contacting with removable spring-seat, for limiting downward movement of cutter rod and cutters.

Does not use.

The slips or cutters in the Double device frequently break just above the inward projection. This permits a large portion of the cutter to fall down the hole causing the loss of the hole or the "fishing" and like difficulties above referred to. This weakness in the cutter is due to the fatal defect of the Double underreamer—THE SPREADING DEVICE REMAINS BETWEEN THE CUTTERS WHEN THEY ARE COLLAPSED. It is, therefore, necessary to cut this notch or recess out of the slips to permit them to collapse over the bottom of the downward extension. This notch or recess, which forms the upper face of the inward projection, causes a weakness in the cutter which can never be overcome in the Double reamer.

The Double reamer cannot be assembled without removing the "sub" and the convenience of assembling at the bottom as with the Wilson reamer, was not dreamed of by Double.

Many other unsatisfactory features of the Double underreamer could be mentioned here, but the fatal defects above pointed out will probably be sufficient to prove that it was not, as claimed by the appellee, the *last step* in the art, if any other proof of that fact were needed than that, with the advent of the Wilson underreamer, the appellee ceased the manufacture of the device covered by the patent in suit and has since manufactured underreamers following the teaching of the Wilson device, and which have been adjudged infringements of the Wilson patent.



It will now be shown how these defects of the Double underreamer and its predecessors were overcome in the Wilson invention, which provided new fixtures and combinations. That these defects were overcome in the Wilson underreamer so as to make of it a practically unbreakable tool and one that meets all the requirements of a successful underreamer is plainly shown by the testimony, given in this case, by many practical drillers who have used numerous types of underreamers.

At this point we quote the testimony of E. C. Wilson, the inventor, as follows (R. p. 140 et seq.):

“My first step toward the invention of the Wilson underreamer covered by the Wilson, underreamer patent was while I was with the Baker Iron Works, probably during the year 1902 or 1903. My acquaintance with oil-well men frequently led to conversations, discussions, of different tools in use, and there was a frequent reference to the need of a satisfactory underreamer. There was scarcely ever a reamer sent into our shop for repairs that did not lead to a suggestion by some driller or some superintendent that somebody should devise an underreamer which would stand up to the work. I took occasion to ask them what the faults were, and what the weaknesses were, and as at that time the Double underreamer was coming into use that reamer was probably referred to more often than any other. I was told that that underreamer’s cutters were too narrow, that they did not expand out to sufficient width to ream the hole large enough,



and that its narrow cutters had a tendency to "Key-way" the hole, as they termed it. They also said that the middle joint was objectionable, as several of the companies lost the lower half of the Double underreamer in the hole, and they considered that joint weak. They also stated that it was a hard matter to get the Double reamer down in the hole, that they had to tie the cutters together in order to do so, in many cases. And they also said that the cutters themselves were weak; that they bent in the shank, and frequently broke, and portions of the cutters were lost in the hole. They also told that the key and mandrel by which the cutters were suspended was a weak device and should be strengthened some way or other. I asked some of them what opportunity there would be for an invention in that line, and they said that they believed the field had not been exploited, that somebody would come along some time and devise the right kind of an underreamer. I was a poor boy and on a small salary, and it occurred to me that there was an opportunity to make some money, and I commenced to study underreamers and what the requirements were, and tried to devise new ideas and new arrangements, and, if possible, to overcome the faults. I presume [128] I worked on that underreamer for a year before it commenced to formulate itself into any definite shape. I had sketches and drawings in my pocket which I had worked on at odd times, and until, finally, it commenced to assume a certain definite form, and after I had satisfied myself that my design was about right, I made working drawings and studied them over very carefully. I laid

these drawings out to scale to see that I would have the right amount of expansion and the right amount of stock properly distributed to stand the strain. I finally had one made up, an embodiment of my design, at Baker Iron Works' Shop."

The Wilson underreamer, as has been pointed out heretofore, contains a forked or pronged mandrel *which permits the cutter shanks to collapse between these forks or prongs*. The cutters are made with a broad cutting head, and a *shank* which reaches upward to the point of suspension in the mandrel. The lateral shoulders with their faces 4<sup>3</sup>, of this cutting head, bear upon the prongs when in reaming position. In collapsed position the cutter head swings inward below the prongs and the shanks close together between the prongs. The lugs 2' feet on the prongs are the elements which hold the cutters apart when in reaming position, and it is to be noted that this spreading device *is between the cutters when they are in the reaming position, and that it is not between the cutters when they are collapsed*. This distinguishes both the "means" and the mode of operation of the Wilson underreamer from all other underreamers, in which the spreading member is a solid portion of the mandrel.

Here was one of those changes in an art which resulted in a mode of operation which was epoch-making. This new and novel design of mandrel and cutters eliminated all of the above-described difficulties common to the Double device and its prede-

cessors. By this stroke of genius Wilson converted failure into success and this has been the "last step" in the design of underreamers, within the Paper Bag case, 143 U. S.

Because of these novel features in construction, which are the basic features of the Wilson underreamer, it can be made of a strength unheard-of in any prior reamer. The testimony in this case made it plain that there are few if any instances within the knowledge of the technical experts and drillers where the cutters of a Wilson underreamer have been lost in the hole.

The broad cutting head of the Wilson cutter bears at its lateral shoulders on the spreading prongs or forks and this broad bearing eliminates the torsional strain which, in the Double device, breaks the slips or cutters out of the dovetail ways.

Also this design permits the use of straight retaining shoulders on the prongs instead of the upwardly and inwardly inclined dovetail ways on the body of the Double underreamer. Thus in the Wilson machine, not only is the torsional strain removed, but the method of holding the cutters in the mandrel is more substantial. It is unheard-of for the cutters of the Wilson underreamer to be torn out of their ways as it is attested by the experts in this case.

Besides eliminating the torsional strain on the cutters, the broad cutter head had a much wider cutting edge than the narrow slip of the Double

machine. This prevents the "rifling" or "key-seating" of the hole, and, as there is much less wear on this broad cutting edge, it does not have to be resharpened so frequently as the narrow slips of the Double device, and there is more stock in the cutter to dress out on resharpening.

The elimination of the torsional stresses and giving the cutter heads broad bearings on the forks or prongs prevents the wearing out of the spreading bearings, which is a serious feature of the Double underreamer as to its one bearing. Also, as it is unnecessary to make room in the cutters for the spreading device when the cutters are in collapsed position, the cutters can be made of greatly increased strength. *In other words, no notch or recess is necessary* so as to leave *an inward projection on the inner face* of the cutter. The Wilson cutters have no "inward projection." The shoulders face inwardly, but do actually recede from the inner face of the cutter. The omission of this notch and the elimination of the torsional strain on the cutter results in a cutter strength which heretofore has been impossible in underreamers.

The defect, inherent in the Double underreamer, due to the pounding of the key on the bottom of the slot and the frequent breaking of the slot through the bottom of the downward extension, is not found in the Wilson device because Wilson does not use key, slot nor downward slotted extension.

In the Wilson underreamer, the cutter bearings on the prongs or forks are downwardly and inwardly inclined. This simple feature eliminates the “plunging” which is a serious detriment to the operation of the Double underreamer. In the Wilson device, if the cutters jam or stick in the hole, the instant the drill tools are pulled upward the cutters begin to collapse by reason of the cutter-bearings moving down the downwardly and inwardly inclined bearing faces on the prongs. This immediate collapse causes the cutters to be loosened while the drill string is only beginning to move, with the result that the drill string does not “bound” or “plunge”. In the Double machine, when the upward pull comes on the underreamer, the cutters move a long distance on the opposite parallel bearing faces of the downward extension till they are able to suddenly collapse over the end of this downward extension at a time when the upward pull on the underreamer has become very violent. The sudden releasing of the cutters causes the upward “bound” or “plunging”. The elimination of the plunging evil contributes in no small measure to the success of the Wilson underreamer and this feature was misunderstood by the lower Court as is evidenced by the following statement from its decision:—

“The feature of the ‘opposite parallel bearing faces’ (of the Double underreamer) ‘is only included in claims 1 and 2 and does not appear in claim 3. The opposite bearing faces 9 upon the prongs of the Wilson device are the equiv-



alent of the opposite parallel bearing faces in claims 1 and 2 of the patent in suit. It is true that the former are not exactly parallel, but they are approximately so *and could be made so without affecting, materially the function discharged by them.*”

The forked or pronged design of the Wilson mandrel makes it possible to assemble the Wilson underreamer from the bottom and dispense with the “sub” or extra joint in the mandrel, which is a highly detrimental feature of the Double and many previous underreamers. This is accomplished by the use of the “cross” or “tee”, instead of the removable key as in the Double design, and the removable spring seat in the mandrel which is original with the Wilson device. Incidentally, it should be mentioned, that the use of this solid “cross” or “tee” prevents the possibility of the loss of the cutters in the hole so frequent with the failure of the key in the Double design.

Finally the form of the Wilson mandrel is such that, if any of the parts of the prongs or forks become injured or worn, the old prongs can be cut back and the bottom of the mandrel can be remachined, thus making a new mandrel of an old one. When a Double mandrel becomes worn or injured (and they are very short-lived), it must be discarded.

Almost any one of the above described novel features of the Wilson underreamer would have enabled the Wilson device to drive all other under-



reamers out of the market but, with all of these advantages over previous types of underreamers, the fact that this invention would prove to be the last and final step in the art became instantly apparent to everyone conversant with the underreamer problem. When the Wilson underreamer appeared on the market the appellee realized immediately that the Double underreamer, as described and illustrated in the patent in suit, would never be able to compete with so perfect a device as the Wilson underreamer and that the appellee's only possibility of remaining in the business of manufacturing underreamers depended upon promptly modifying the Double machine so as to include at least some of the valuable features of the Wilson device. This it did and has been found guilty of infringing the Wilson patent.

The most prominent novel feature of the Wilson underreamer is the design of its mandrel with its prongs or forks permitting the cutters to collapse completely between them. The Appellee could not adopt this design without making a Wilson underreamer. The next feature of prominence in the Wilson patent is the design of the cutters with shanks and broad cutting heads which permit of wide inthrust bearings on the mandrel, give greater cutting capacity, obviate the evil of "keyseating" or "rifling" of the hole, and eliminate the torsional strains which resulted in the breakages so common to the Double and all previous designs. Double saw that this feature could be incorporated into his

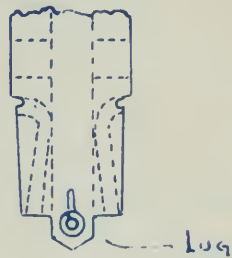
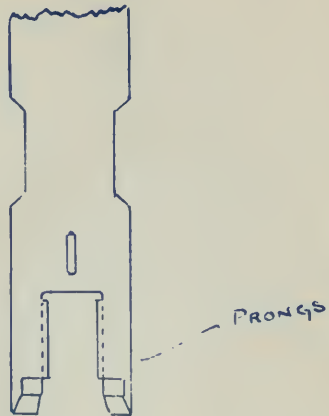
machine and he lost no time in doing so. He cut away the body on either side of the downward extension of his mandrel to make the broad seat for the cutter heads and then made his cutters with *bodies and shanks* in imitation of those features of the Wilson cutters which are covered by basic claims in the Wilson patent. Now the combination thus introduced in the Double reamers infringes claims of the Wilson patent.

Although this modification of the original Double underreamer did not have all of the objectionable features of the original type, as described by the patent in suit, it still had so many serious defects that it was unable to compete successfully with the Wilson device. The key-slot still wore out through the bottom of the downward extension. The in-thrust of the cutters still wore out the downward extension. It still was necessary to use the "sub" or extra joint as even this modification of the original Double underreamer could not be assembled from the bottom. Finally, the bottom of the mandrel could not be remachined when worn out. It was apparent that a still closer imitation of the Wilson device must be made if the Appellee was to continue in the manufacture of underreamers and this was accomplished in the Double Type F underreamer by cutting away the downward extension entirely and substituting, in its place, a block which is held in place by a bolt through the *prongs* or *forks* which are now formed on the bottom of the mandrel. It will now be seen that the bottom of the mandrel, in

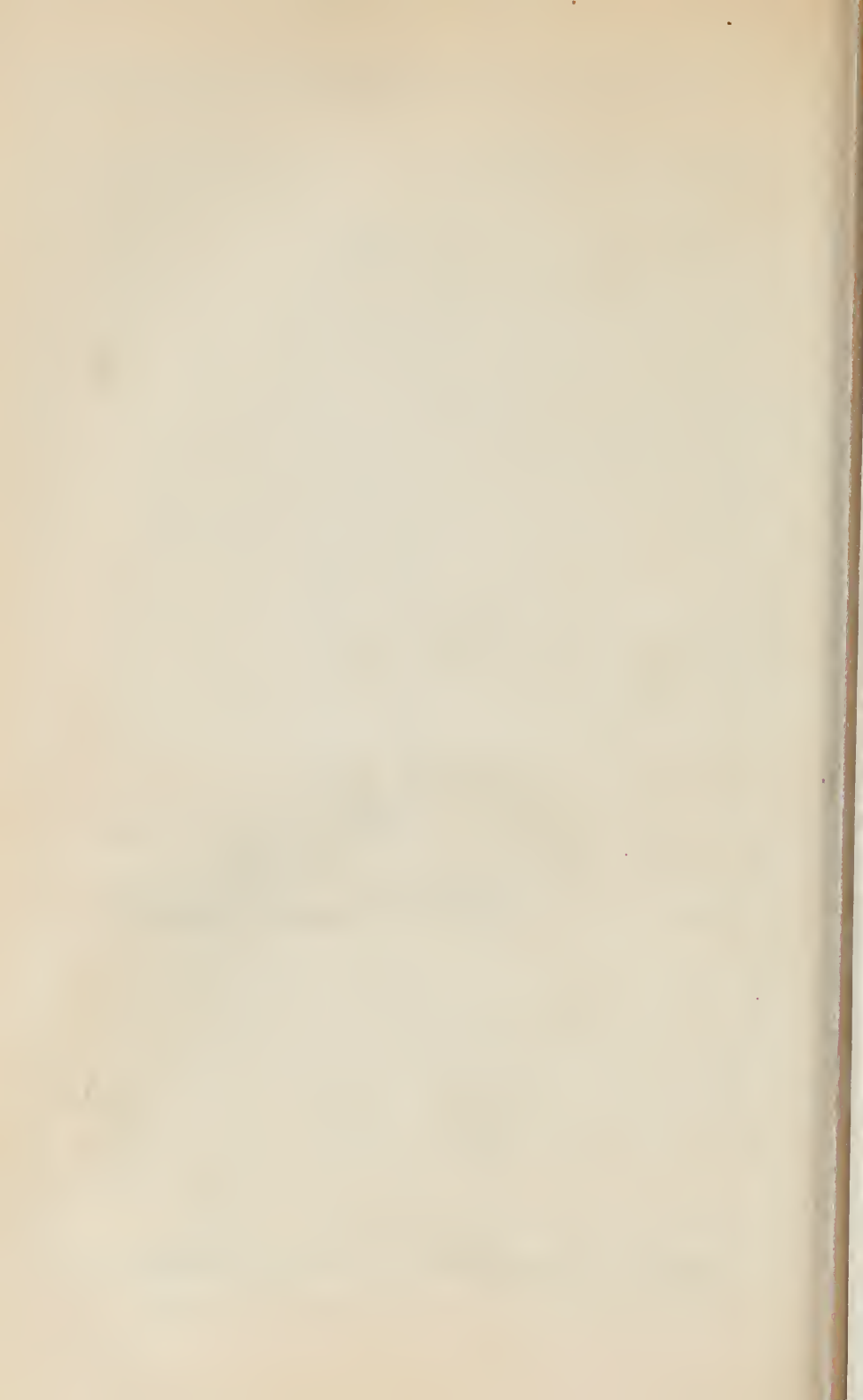
this "Double Type F" underreamer, has the prongs or forks terminating in lugs which is a distinctive feature of the Wilson underreamer and which is covered by basic claims in the Wilson patent, found infringed. In order to make the device an exact copy of the Wilson underreamer, the internal shoulder, which served as a spring seat in the mandrel, was now removed and the Wilson key was passed through the mandrel and a slotted cutter rod or tee to serve as a removable spring seat and thus permit of assembling the device from the bottom and dispensing with the "sub" or extra joint. It has already been explained that, at the time of adopting this Wilson key, Double and one Bole, who had long been an employee of Wilson's, applied for and were granted a patent on this Wilson key, Bole swearing that he had invented same. Wilson won this suit on appeal as will be seen in the citation previously referred to (227 Fed. 607), and a patent has since been issued to Wilson for the key combination, and a suit under same against Appellee is now pending.

Also, it has been pointed out heretofore, that in case 2996, tried with this case in the lower Court, all of these modifications of the original Double underreamer in suit, have been held to infringe the Wilson device. In his decision the lower Court rightly held as follows:—

"In the earlier Double devices there were secondary dovetails adjacent to the junction of the cutter head and shanks, with corresponding ways in the inner faces of the extension, forming



DOUBLE TYPE "F"





the recess in which the cutter is mounted on the body. These added ways caused an outward flare at the mouth of the recess, or pocket. As these ways were made deeper and the flare increased, a wider bearing would be given and opportunity for a wider faced cutter to bear upon it; but, *when defendant departed from this form of construction and entirely sheared away the side web of the extension to form a lug, the bearing faces to accommodate the wider cutter head, he appropriated the invention and conception of Wilson, and particularly of the patent in suit.* The fact that defendant did not appropriate the, perhaps, relatively more important conception of Wilson, whereby the cutter shanks were allowed to collapse between the prongs, does not excuse it, or take from the infringement it has practiced, for the seat or bearing of the cutter head on these faces, or lugs, is not dependent upon the swing in collapse of the cutter shanks between the prongs.”

It will now be seen that the point to be determined in this case is whether or not the designing by Wilson of the forked or pronged type of underreamer mandrel and the cutters with bodies and shanks to co-operate with lugs and ways on the mandrel so as to permit of having THE SPREADING PRONGS OR FORKS BETWEEN THE CUTTERS IN REAMING POSITION AND WITH NO SPREADING DEVICE BETWEEN THEM WHEN IN COLLAPSED POSITION; WITH THE CUTTERS COLLAPSING BETWEEN THESE PRONGS OR FORKS INSTEAD OF TILTING OVER THE SPREADING DEVICE; entitles Wilson to be considered an inventor, and his underreamer, to be regarded as an invention totally

distinct from the Double invention, or, if it is only an improvement dominated by the Double patent.

Here is one of those cases in which the history of patent litigation abounds, viz., where, after numberless attempts on the part of all the skilled inventors and mechanics in a craft, perfection is suddenly attained. Surely this marks the inventor. Double had his own and numerous previously-used underreamers in front of him and he failed to see this solution of the evils common to his and all previous designs of underreamers. The same may be said of Double's collaborator Jones, whom this evidence shows was a far more resourceful designer than Double and unquestionably invented the subject of the patent in suit. This brief is written under the extreme time limitations necessitated by the order made by your Honors setting this cause and cause No. 2918 for hearing on the same day, May 28, 1917, leaving Appellant only five days on this brief. We have only had a part of the proof of the printed record to make reference to, and for this further reason have not been able to make as extensive references to the testimony as would otherwise have been done. For the purposes of this opening brief, therefore, and in one further particular instance, we must invite your Honors' attention to the full testimony of the witnesses Double, Jones, Jones' wife, Haskett, Shaw, Richardson, Naugle and Skinner to support our contention that under no rule of law, on the facts presented, could Double be considered the *sole* inventor,

if even a joint inventor, of the subjects of the claim of the patent in suit.

The testimony referred to shows that before the date of the Double invention a model of the Brown reamer was seen and fully considered by Double; that a model of the Jones Round Nose Reamer was likewise known and examined by Double; that Double knew all about the Swan reamer; that Double probably knew about the O'Donnell and Willard reamer and likely about the Canadian reamer; and that Jones discussed these reamers with Double. So that as to anything in common as to these reamers and the Double reamer (and they meet every feature of the Double reamer except the notched cutter-carrying key), Double could *not* have been an original and independent inventor as required by statute. Jones was, as this testimony shows, the man who really designed the Double reamer of the patent in suit. He believed it belonged to Double as his employer—a fallacy that explains much on this issue of invention.

North, O'Donnell & Willard, Kellerman, Swan, and a host of others all had tried and failed when Wilson designed his pronged or forked mandrel with lugs and cutters with shouldered heads and shanks which permitted a co-operative interrelation resulting in a mode of operation which the Court in case 2918 describes as the, perhaps, "*relatively more important conception of Wilson, whereby the cutter shanks were allowed to collapse between the prongs.*"

If the most prominent designing and constructing engineers in the art failed to solve this problem after serious attempts to do so, the court must necessarily

conclude that more than the ordinary skill of the mechanic was required to solve it. Mr. Wilson, therefore, in creating as a solution of that problem, the pronged or forked mandrel with lugs and the cutters with shouldered heads and shanks, exercised his inventive faculties. It has been wisely said that this is the best test and proof the courts have for determining in any particular instance whether or not the inventive faculties were exercised in the creation of a "means for accomplishing an end."

"One criterion of invention is that others have sought and failed, even when the process is so simple, when discovered, that many believe they could have produced it if required."  
*Walker on Patents*, Section 26.

*Hanifen vs. Armitage*, 117 Fed. 849.

This rule is strongly stated in the case of *Expanded Metal Co. vs. Bradford*, 214 U. S. 381, where the Supreme Court speaking through Mr. Justice Day, said:—

"It is often difficult to determine whether a given improvement is a mere mechanical advance, or the result of the exercise of the creative faculty amounting to a meritorious invention. *The fact that the invention seems simple after it is made does not determine the question*; if this were the rule many of the most beneficial patents would be stricken down. *It may be safely said that if those skilled in the mechanical arts are working in a given field and have failed after repeated efforts to discover a new and useful improvement, that he who first makes the discovery has done more than make the obvious improvement which would suggest itself to a mechanic skilled in the art, and is entitled to protection as an inventor.*"

See also *Loom Co. vs. Higgins*, 105 U. S.

Again in *Edison Electric L. Co. vs. Novelty Incandescent Lamp Co.*, 167 Fed. 982, it is said:—

“The fact is, as the record shows, dispelling any such idea, that not a few inventors, including Mr. Edison himself, had for some time been busied in the effort to secure a satisfactory arrangement of leading-in wires and *the different means taken for doing so, better than anything else, shows the complexity of the problem involved, and that in order to meet it something more than ordinary skill was required.* To deny its successful solution the merit of invention upon the contrary idea *is to declare these efforts were needless, and that there was already disclosed in the art an easy and obvious way out,* which ought to have been, but somehow was not, seen. We are not, however, to be persuaded to that view.”

The Appellee in this suit alleges that the Double underreamer was the last step in the art of designing underreamers, and that this same discarded Double device accomplished every beneficial result claimed for the Wilson underreamer; that the Wilson combination of elements is merely a shifting of mechanical equivalents and substitutes for the elements comprising the Double invention; that this shifting of mechanical means was obvious to Double and required only mechanical skill not amounting to inventive genius.

The same contention was made in the case of *St. Louis Street F. Mach. Co. vs. American Street F. Mach Co.*, 156 Fed. 567, and the facts in that case are so nearly identical with the case in suit that it will be quoted at considerable length:—

“There is no claim that any of the elements



of the patent are new. The tank, the water under pressure, the nozzle, the delivery apertures, and the means of adjustment are all old, but the contention is that the particular combination of these elements in the patent produces a new and useful result, and is patentable. The new and useful result claimed is the effective loosening up of dirt and material on the street and washing them off into the gutter by one action without injury to the street. To accomplish a new and useful result within the meaning of the patent law (Section 4886, Rev. St.—U. S. Comp. St., 1901, p. 3382—), it is not necessary that a result before unknown should be brought about, but *it is sufficient if an old result is accomplished in a new and more effective way*. If the value and effectiveness of a machine are substantially increased, the new combination of old elements, which does it, is patentable. *Loom Co. vs. Higgins*, 105 U. S. 580, 591, 26 L. Ed. 1177; *Cantrell vs. Wallick*, 117 U. S. 689, 694, 6 Sup. Ct. 970, 29 L. Ed. 1017; *Anderson vs. Collins*, 58 C. C. A. 669, 122 Fed. 451, and cases cited. The proof does not permit us to doubt that the machine of the patent does the work of scouring and flushing asphalt and other smooth streets in a more effective and satisfactory way than it was ever done before. . . .

“But it is contended that the device of the patent is only a mechanical shifting of existing means which does not involve invention, and that, if it did, it was anticipated by several other patents. The new and beneficial result accomplished by a device of the patent already referred to consisting of more effective and less injurious way of scouring and flushing streets might afford a sufficient answer to this contention; but there is more. The defendant company as found by the learned trial court and shown by abundant proof, upon being advised



of the features of the Ottofy invention, abandoned its old machine made according to the Murphy patent hereafter to be considered, and adopted the device of the Ottofy patent. Murphy, defendant's patentee, upon being advised of the defects in his machine and the objections made to it which Ottofy later remedied, confessed his inability to obviate them. Pickles, the engineer of defendant company, upon hearing of Ottofy's invention, claimed to be the first and original inventor thereof, applied for a patent therefor and assigned all rights to defendant. These are all significant admissions by experts, and that, too, against the interest of patentable novelty in complainant's device. *There is also evidence of more or less cogency that that device has superseded other devices* in the few cities which employ scouring and flushing machines in use upon smooth or asphalt streets. These facts are entitled to weight when the question is whether the machine exhibits patentable invention. *Keystone Mfg. Co. vs. Adams*, 151 U. S. 139, 14 Sup. Ct. 295, 38 L. Ed. 103; *National Hollow Brake Beam Co. vs. Interchangeable Brake Beam Co.*, 45 C. C. A. 544, 558, 106 Fed. 693, 707; *Kinlock Tel. Co. vs. Western Electric Co.*, 51 C. C. A. 362, 113 Fed. 652, 665. In *Krementz vs. S. Cottle Co.*, 148 U. S. 556, 560, 13 Sup. Ct. 719, 720, 37 L. Ed. 558, Mr. Justice Shiras, in delivering the opinion of the court, after referring to the contention that the step taken by the patentee was one obvious to any skilled mechanic says the contention is negatived by the conduct of defendant's president, which was in many respects like that of Murphy and Pickles. His language is:—

“ ‘The view of the court below that Krementz's step in the art was one obvious to any skilled mechanic is negatived by the conduct of Cottle, the president of the defendant company.

He was himself a patentee under letters granted April 16, 1878, for an improvement in the construction of collar and sleeve buttons, and put in evidence in this case. . . His improvement was to form a button of two pieces, the post and base forming one piece, and then soldering to the post the head of the button as the other piece. *Yet skilled as he was, and with his attention specially turned to the subject, he failed to see what Krementz afterwards saw,* that a button might be made of one continuous sheet of metal, wholly dispensing with solder, of an improved shape, of increased strength and requiring less material.' ”

These facts are so similar to the facts in the case at bar that we will again quote the most significant paragraph substituting in parenthesis the names of the parties in this case.

“The defendant company (Union Tool Company) as found by the learned trial court and shown by abundant proof, upon being advised of the features of the Ottofy (Wilson) invention, abandoned its old machine made according to the Murphy (Double) patent hereinafter to be considered, (Defendant’s Exhibit Double Underreamer) and adopted the device of the Ottofy (Wilson) patent. Murphy, (Double) defendant’s patentee, upon being advised of the defects in his machine and the objections made to it which Ottofy (Wilson) later remedied, confessed his inability to remedy them. Pickles, (Bole) the enginee of the defendant company, upon hearing of Ottofy’s (Wilson’s) invention, claimed to be the first and original inventor thereof, applied for patent therefor and assigned all rights to defendant (Double).”

Certainly it would be difficult to find two cases more nearly identical and the same ruling should

be applied to them. Notwithstanding the Appellee professes to believe that the Wilson underreamer is not an invention, Double gave it out as his opinion that it required the exercise of Bole's inventive faculties to add the relatively insignificant key feature to the Wilson device when he assisted Bole to patent it. If it constituted an inventive act to add to the Wilson underreamer this element, it certainly constituted an inventive act to create the Wilson underlying underreamer invention which rendered the Double underreamer obsolete long before Wilson invented this key which Bole and Double sought to appropriate.

No one of the numerous engineers skilled in the use and manufacture of underreamers ever designed an underreamer madrel with its lower end terminating in prongs or forks having lugs until Wilson conceived his invention.

“It seems to be conceded that the English structure can not be used as the Jeffrey structure is used without first making several important changes. The proof leaves no doubt on that subject. It is argued that these changes might have occurred to the skilled artisan. That they did not occur to anyone until Jeffrey made the invention is evident. They seem simple enough now but invention depended upon their being successfully wrought out. *In short, in these changes lies the difference between the commercial failure of the English patent and the widely recognized success of the patent at bar.*” *Gormully & J. Mfg. Co. vs. Stanley Cycle Mfg. Co. et al*, 90 Fed. 280.”

We submit that it cannot be denied that the conception and devising of the Wilson underreamer was the result of inventive genius of a high order and

that Wilson succeeded where all of the great designers and inventors of well-drilling appliances had failed. It is well established in law that the simplicity of a device may enhance, rather than detract from, the achievement of an inventor. Many of the greatest advances in numerous arts have been due to a change in an appliance of that art—a change so slight as to cause everyone to wonder why it had not been done before.

“It may seem a small thing, involving no great ingenuity, in an ordinary pipe coupling to merely make the spud of brass, beaving the other parts unchanged, but considering the efforts of others in the same direction and the various expedients resorted to, to obtain an easily detachable, and at the same time a steam and water tight joint, the simplicity of the device confirms rather than detracts from the invention, something more than ordinary mechanical skill being required to go so directly to the mark. Nor is it of any consequence that the well-known principle is made use of, that iron against brass will not rust. It is not necessary, in order to make out invention, that new qualities shall be evolved. It is sufficient if old ones are novelly and inventively applied.” *Western Tube Co. vs. Raineer*, 156 Fed. 52, affirmed (C. C. A.) 159 Fed. 431.

Again in *National Casting Co. vs. American Steel Foundries*, 182 Fed. 636, it is said:—

“Slight changes in appearance may bring about radical changes in results. Invention is not to be slighted because the changes are slight; neither is the inventor who makes his anti-creep feature more effective to be barred of his added invention because to his inventive brain the changes to bring about such result needed only to be few or slight in appearance. The doctrine

of mechanical suggestion or obviousness loses much of its force when invoked in such a case.”

The same idea is expressed in *Trost Co. vs. Cohn*, 119 Fed. 505:—

“It is this capacity for accomplishing results, this faculty of seeing what others fail to see and hearing what others fail to hear, which has always distinguished success from failure and the inventor from the mechanic.”

That the Wilson undereamer is not a mechanical improvement of the Double underreamer, but on the other hand, is an invention of rare merit in a generically different line of development, is conclusively proven by the fact that it was an immediate success commercially, and promptly displaced the Double device. This success has always been accepted by courts of law as the strongest evidence of invention. The evidence in this case shows that the success of the Wilson underreamer was so convincing from the moment of its appearance on the markets that it drove the Double underreamer out of competition and the Appellee immediately began the manufacture and sale of infringing devices.

“In determining this question (of invention), the fact that the article produced supersedes all other appliances, or that a useful and commercially successful result has been attained, or that the value of the thing patented has been recognized by the public in extensive use, has a controlling, if not a conclusive, effect; and it should have, upon obvious principles of justice to one who sees that which he suggests or constantly appropriated and used by others. Such is the proof in this case.” *Wilkins Shoe-Button Fastener Co. vs. Webb*, 89 Fed. 997.



This court has said in *Morton vs. Llewellyn et al*, 164 Fed. 693:

“Apart from the presumption of novelty that always attends the grant of a patent, the law is that when it is shown that a patented device has gone into general use and has superseded prior devices having the same general purpose, it is sufficient evidence of invention in a doubtful case.” *The Barbed Wire Patent*, 143 U. S. 275, 292, 12 Sup. Ct. 443, 36 L. Ed. 154; *Key-stone Manufacturing Company vs. Adams*, 151 U. S. 139, 143, 14 Sup. Ct. 295, 38 L. Ed. 103; *Irvine vs. Hasselman*, 97 Fed. 964, 38 C. C. A. 587; *Wilkins Shoe Button Co. vs. Webb*, (C. C.) 89 Fed. 982; *National Hollow B. B. Co. vs. Interchangeable B. B. Co.*, 106 Fed. 693, 707, 45 C. C. A. 544.”

The contention that the Wilson underreamer is not an invention but contains only such mechanical shifting of devices as would suggest themselves to a mechanic, as distinguished from an inventor, will probably not receive the serious consideration of this court. The fact that this simple and satisfactory solution of the underreamer problem did not so suggest itself to any of the great designers and inventors in the art until Wilson conceived his device, will at once negative this suggestion. Had this solution been obvious the mechanical eye of more than one of these inventors would have perceived it.

“The practised eye of an ordinary mechanic may be safely trusted to see what ought to be apparent to every one. As was said by Mr. Justice Bradley in *Loom Co. vs. Higgins*, 105 U. S. 580, 591:—

“‘Now that it has succeeded, it may seem very plain to anyone that he could have done



*it as well.* This is often the case with inventions of the greatest merit. It may be laid down as a general rule, though perhaps not an invariable one, that if a new combination and arrangement of known elements produces a new and beneficial result never attained before, it is evidence of invention.' " *Potts vs. Creager*, 155 U. S. 608.

In view of all of these facts and rules of law we do not perceive how any court could find, *as a fact*, that the Wilson design of underreamer is merely the work of a mechanic who has shifted the mechanical devices of the obsolete Double device and substituted some of them with obvious mechanical equivalence; that the discarded Double underreamer, as described by the patent in suit, was the "last step" in the art of underreamer design and this notwithstanding the Appellee's successor ceased its manufacture immediately when the Wilson underreamer appeared on the market and began the manufacture of imitations of the Wilson device which have now been adjudged to be infringements of it. If the Double patent in suit is a satisfactory underreamer and is the "last step" in the art, is incapable of improvement, we challenge the Appellee to explain why he does not revert to its manufacture instead of furnishing a heavy bond (\$25,000) to enable him to continue the manufacture of these copies of the Wilson underreamer pending the appeal from the decision in which the Appellee is declared to be infringing the Wilson patent.

It is apparent that in a case brought within the above rules defining what constitutes invention, as distinguished from mechanical ingenuity, the question of invention is a question of fact. It is not a

question of arbitrary opinion. The application of every known test of invention to the Wilson underreamer proves it to be an invention of great merit and of a design differentiating it from the fatally defective method of spreading the cutters by a division wall or "hollow slotted extension" common to the Double and numerous previous designs. The Appellee praises the prior art and follows Wilson. Wilson was the first to perceive that by forming the lower end of the mandrel into prongs or forks with lugs, and designing a cutter with a broad head and shouldered shanks, a co-operative inter-relation would result which would eliminate all of the evils common to the previous designs. It is now easy for the Appellee to contend that he saw this great possibility first. *It is easy to contend, but not possible for him to prove, that his obsolete underreamer actually contains the equivalent of these features!* And there are many others. In the design of his underreamer, Wilson exhibited in a marked degree "The capacity for accomplishing results, this faculty of seeing what others fail to see and hearing what others fail to hear which has always distinguished success from failure and the inventor from the mechanic."

"Here was a situation, say the defendants, where a hard unyielding substance had been tried and found wanting and where a soft and gripping substance was needed in its place. Rubber possessed all the required qualities and everyone knew it. What then was more natural than to use rubber? *This argument has been so often considered by the courts that little of value can be added to the discussion, and, after all, the old answer is the best answer,—'No one did it before.'* The record shows that for at least ten years prior to Gorton's invention men

skilled in the art were endeavoring to make an operative supporter and several had so far succeeded as to secure patents, but always along the same lines. There was always the metal button, there was always the fabric clamped between two metallic surfaces. Rubber, in almost every conceivable shape and form, was everywhere in use, but no one thought of it. Like a jewel lost in a crowded thoroughfare,—multitudes pass it unnoticed, some actually tread upon it, others stop and gaze for a moment, but hurry on, deeming it some worthless tinsel; at last comes one who recognizes its value and picks it up. Others might have done this it is true, but they did not; he did, and is entitled to the prize which he has rescued from the mire. If one should attempt to snatch the gem from the finder on the ground that he passed it frequently and could have picked it up as well as not, he would in all probability be promptly turned over to the police as a thief or a lunatic. *It is this capacity for accomplishing results, this faculty of seeing what others fail to see and hearing what others fail to hear which has always distinguished success from failure and the inventor from the mechanic.* ‘In the law of patents it is the last step that wins’, says the supreme court. This is the step which Gorton took.” *George Trost Co. vs. Cohn*, 112 Fed. 1009, affirmed (C. C. A.) 119 Fed. 505.

Wilson “succeeded where others failed.” He took the “step which marks the difference between a successfully operating machine and one that stops short of that point.” He “obtained absolute simplicity which is the highest trait of genius.” His underreamer “went into general use and superseded prior devices having the same purpose.” Wilson “took the last step”—the step that wins. He deserves the protection of the law which was framed

to protect the inventor as against a prior patentee who did not produce or patent what the later inventor did.

“If there be one central controlling purpose deducible from all these decisions, and many more that might be quoted, it is the steadfast determination of the Court to protect and reward the man who has done something which has actually advanced the condition of mankind, something by which the work of the world is done better and more expeditiously than it was before.” *Hobbs vs. Each*, 180 U. S. 383.

We submit that it cannot be doubted that the Appellant can rightfully claim the protection of that law.

Inasmuch as grave doubt exists as to whether the Double patent discloses and claims any invention at all over the prior art, and also as to whether Double himself created such invention, if any exists, we submit that a finding of infringement by this court would be contrary to the proofs and law, even if the alleged infringing reamers had been made in exact accordance with the drawings and specifications of the Double patent. It is, therefore, beyond the remotest realm of reason and application of law to facts that the totally dissimilar, radically better and Double-reamer-superseding patented Wilson reamer should be found an infringement of the subjects of the Double claims. To do so, would work in effect a revocation of the patent grant to Wilson and a substitution of the same for the patent to Double.

We have thus seen that the Wilson invention is one of great merit; that it has played an important

part in the great industry of oil development; that its construction and interrelation of parts is new and radically different from the Double reamer or any other reamer preceding it; that furthermore, it differs radically in its various principles of action and modes of operation; that it has overcome the many faults common to the Double reamer and all others and that it is covered by good and valid patents; Furthermore, we have seen that the Double reamer, which was a mere step in the art, was a very unsatisfactory device, and was promptly abandoned by the public and that the Appellee appropriated Wilson's inventions when constructing reamers thereafter; that the Double patent is necessarily limited in scope to the very narrow step of the Double invention; and that by no doctrine of patent law can it be so distorted and so abnormally extended in scope as to cover the Wilson reamer.

Therefore, we respectfully submit that it will be the desire of this Honorable Court to remedy the revolutionary effect of the decision of the lower Court, which decision if sustained would sweep away much of the soundest doctrines of patent law and establish that one can claim functions and results. The effect of narrow, combination claims would be given undreamed of scope; voluntary limitations would be set aside and new and unthought of monopolies would be granted regardless of the nature of the patent, irrespective of the rights of the public; difference of construction and interrelation of parts—different principles of action and different modes of operation would no longer be a defense against a charge of infringement of a combination patent; invention would be discouraged and the public



robbed of the protection heretofore granted it as to notice of what a patentee was claiming by his patent.

Such would be the result should your Honors affirm the decree of the lower Court.

We submit that such would be contrary to the established principles of patent law and a great injustice to a worthy inventor and to the public.

Hence, we confidently submit that it is proper for this Honorable Court to reverse the decree of the lower Court with direction that the Bill of Complaint be dismissed and the injunction dissolved.

Respectfully submitted.

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